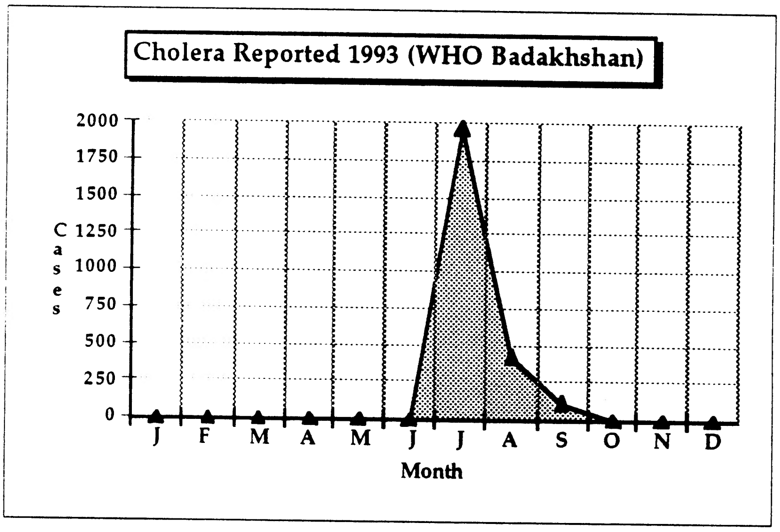
Cholera in Badakhshan

1993 Epidemic

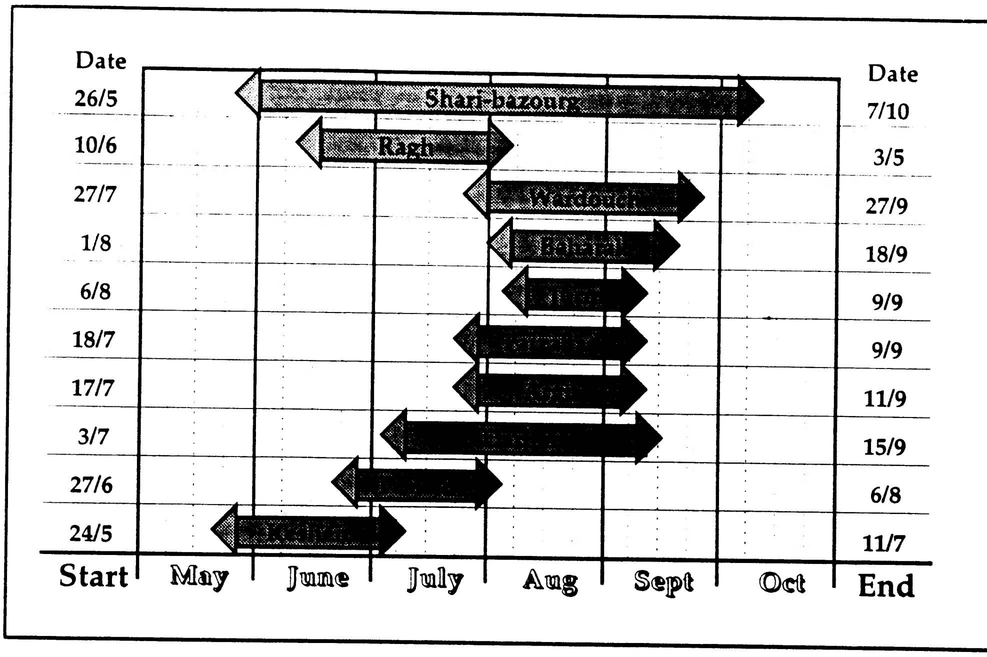
Badakhshan is regularly affected by outbreaks of cholera. **The last big epidemic was in 1993 when WHO recorded 2521 cases over a period of 3 months.** The following graph represents the number of cases presenting per month. It appears clear that cholera epidemics in Badakhshan are seasonal, following the same pattern as other diarrhoeal diseases. Cholera traditionally starts in the more western provinces of Afghanistan, gradually spreading eastwards into Badakhshan Province. This figure of 2521 cases is probably a very conservative estimate of the real number of cases. Reasons for this are the poor organisation of the data collection system at health centre and regional level.

When asked which epidemic was more severe (1993 or 1995), all but one district responded that 1995 was by far the worse, reaching some villages that are only affected by cholera 2-3 times in 50 years. Most people gave the exceptionally hot spring and poor harvest as the main cause.



Evolution of 1995 Epidemic

Cholera traditionally enters Badakhshan from neighbouring Takhar province. This year was no exception, with the first reported cases occurring in Keshem and Shari-Bazourg districts, both of which border Takhar province. The subsequent spread from district to district appears to be slow and rational, with the more eastern districts reporting cases later in the epidemic. MERLIN's arrival was towards the end of the epidemic, when cholera had ceased in three of the districts, but there was active cholera in seven districts. MERLIN was not told by the MOPH of cases of cholera in the three newly conceived districts of Wardouch, Taskem and Darhem and so our intervention in these areas came later than ideal.



MERLIN's Strategy

A response to a suspect cholera outbreak is all about using resources efficiently and not losing sight of the primary object of:

Reducing the case fatality rate to less than 1%

This requires very active case finding and effective treatment. Other activities such as those aimed at improving sanitation and water supply whilst valid are not the priority in the first few days when all resources should be focused on identifying those affected and getting treatment to them. Thus our initial objectives were:

- visit each district affected by cholera.
- supply with sufficient stocks of medicine to cope with the epidemic.
- identify the villages in these districts with current cases.
- attempt to set up an ORS point in each village with cases.

The quicker the patient can find treatment after the onset of illness, then the less probability of fatality. Many of the villages are 2-3 days donkey ride from the health centres and so the only feasible answer to the problem, is to set up ORS points in these villages.

This decentralisation of resources to try to cover as many of the villages affected is the key to reducing the number of deaths. There are however enormous logistic difficulties to this as many villages are only accessible by foot or donkey. Our basic procedure on arrival at the district health centre is to sit down with the local health staff and first identify which villages have active cholera. Then we organise the nurses into teams, and allocate certain villages to each team. The teams then leave and in each village create an ORS point making one person responsible per village to make the ORS.

The table below shows at which point during the epidemic the MERLIN team arrived. ORS points were set up in Jurm, Argu and Shari-bazourg. We attempted to set up ORS points in the Faizabad district but there is no evidence to show that the nurse entrusted with this task, actually set up any such distribution points. MERLIN's intervention came very late in the epidemic making it difficult to have a major impact on the case fatality rate. MSF-Belgium have a large programme responding to the epidemic from Takhar province, but it seems they underestimated the size of the problem in neighbouring Badakhshan. This was not their fault as all the NGO's in Badakhshan also underestimated the extent of the cholera epidemic. Once MSF were informed by the MERLIN evaluation team of the severity of the epidemic, they responded quickly with a team and materials to assist. These materials were very useful to the MERLIN team in setting up a cholera clinic at Faizabad hospital.

District	First case	Last case	Duration	MERLIN's arrival	Day N°
Keshem	24/5	11/7	48	28/8	-
Taskem	27/6	6/8	40	30/9	-
Darhem	3/7	15/9	74	30/9	-
Argu	17/7	11/9	56	18/8	32
Faizabad	18/7	9/9	53	15/8	28
Baharak	1/8	4/9	39	1/9	36
Wardouch	27/7	27/9	62	-	-
Jurm	6/8	9/9	34	16/8	10
Shari-Bazourg	24/5	7/10	134	25/8	91
Ragh	10/6	3/8	54	27/8	-

ORS points

Village ORS Points

These are the instructions which are translated into Dari and given to each team.

1. Call a meeting in the village with the head man and the people of the village.

- Explain that they must come for treatment if they get diarrhoea
- Explain that they must get treatment quickly
- Explain that they should try to boil their drinking water until the cholera outbreak ends

2. Set up an ORS centre in each villages with cases of cholera

- Choose two shady areas and make one for men and one for women
- Mix ORS regularly during the day
- Everyone with diarrhoea must drink large amounts of ORS during the day. They should try to drink some every hours at least. If they are vomiting still give ORS but give smaller amounts very frequently.
- At night they should take some ORS home with them

- If they still have diarrhoea the next day they should come back to the ORS centre and continue to drink ORS.

3. Severe cases should be transferred to the nearest clinic but they should drink large amounts of ORS before the journey and continue to drink ORS during the journey. This is very important.

4. Every patient with diarrhoea over 8 years of age should receive 3 tablets of Doxycycline as a single dose. This should only be given to those with diarrhoea.

5. It is extremely important to register the patients properly in the exercise book provided. Date, Name, Age, Sex, Village, bloody or non bloody diarrhoea, outcome (death, cured, transferred).

6. If they run out of ORS they should continue the treatment with spring water, drinking it very frequently.

7. Teach one person in each village how to prepare and give the ORS. Make sure that they give ORS very frequently to every patient with diarrhoea.

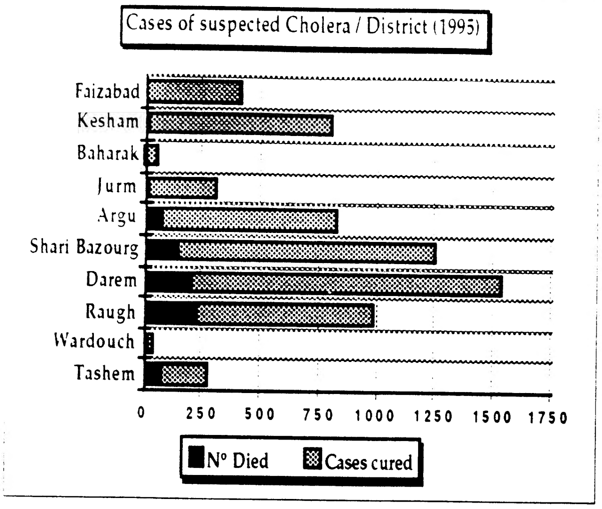
Each village should be provided with:
2 buckets
4 bars of soap
at least 100 litres of ORS preferably 200 litres
4 cups
100 Doxycycline tablets
1 pens
1 exercise book
1 copy in Dari of the how to create a village ORS point

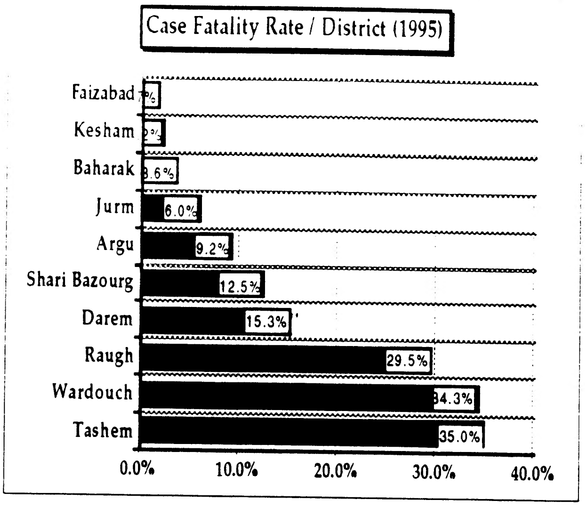
In addition to this the nurses can carry some Ringers (+ giving sets, adhesive tape, scalp vein infusion sets or blue 23G needles) so then they can treat some of the more severe cases as it can be a 3 day donkey ride to the nearest clinic.

Note that ORS should be given freely and complicated regimes of measuring the amount given should be avoided as it confuses people. The simple message should be that ORS should be drunk very frequently if you have diarrhoea.

District Cholera statistics

These figures have been gathered directly from health centre records and as such are as accurate as possible. Some districts have very detailed records and registration, whilst other districts have little in the way of registration and the data needed to be reconstructed from village registers.





The graphs above represent the totals for each district during the 1995 epidemic. The districts most affected are Darhem, Shari-Bazourg, Ragh, Argu and Keshem. The CFR's in many of the districts are very high with no district achieving the 1% CFR universally accepted as a standard of good management. In areas such as Ragh, Wardouch and Taskem the CFRs are astoundingly high. Reasons for this will be discussed in a later section.

The epidemic in Badakhshan province started on 24/5/95 and lasted till the 7/10/95, a total of 167 days. The total number of cases for the Region at the end of the epidemic was:

5716 cases with 763 deaths (CFR 13.4%).

For more detail of each district's performance, see the section on local health data.

Regional Data Collection

The MOPH at national level designed quarterly data collection forms in 1993. These, although available at WHO, do not appear to be being completed in any of the Badakhshan districts that we visited. Instead reports are sent irregularly to the regional level often in the form of letters, more descriptive than numeric. If there are figures, then those of one district often do not cover the same period as others. For example we saw a report from Jurm district for the period 21/8/95-28/8/95 compiled together with a report from Keshem for the 27/7/95-28/8/95 and other reports covering differing periods. These figures were then reported as regional figures for the period 21/8/95-28/8/95. The data was incomplete, certain district figures repeated, others not included and the time period meaningless. These figures are then filed by WHO and UNICEF and reports sent to their offices. Unfortunately the majority of the original reports sent to Faizabad are lost, and often health centres do not keep copies of their reports and have little in the way of systematic registration.

Our objectives in finding reliable local information/data are:

1. Document the epidemic
2. Define areas with poor CFR
3. Evaluate the effectiveness of the health response
4. Identify the causes of high CFR
5. Plan a more effective strategy for next year

There has been little in the way of registration and data collection at any of the health centres that I have visited. The exceptions to this are where the SAC have introduced health registers. Unfortunately the supplies have run out in many of the centres visited. These registers do show some useful figures if the nurses/doctors would analyse them. MERLIN has supplied 40 new health registers to assist regional registration and data collection. MERLIN also designed and had printed cholera registers for health centre use.

It is a difficult task to make neat tables and reports from the varying reports and formats at a regional level. The pressure to provide figures, when a complete review of the system would be more appropriate, underlines why the head of Regional data collection provides such inaccurate statistics. It does not take much research to find the gaps in the information. Instead of just accepting this poor data other NGOs involved in health care should assist the MOPH in improving the data collection system. It is nice to have data with which to placate your head office, but if this data is meaningless then it is of little use to anyone, particularly the health planners.

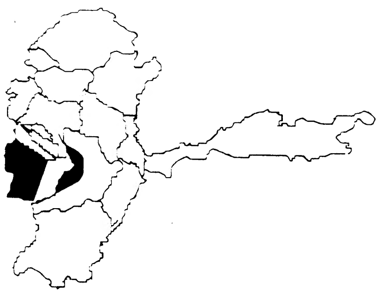
The head of data collection for the province is in agreement with MERLIN. He has three functions within the hospital:

1. Head of EPI.
2. Ophthalmic consultant.
3. Data collection.

He has had very little formal training on data collection methods and epidemiology and is far too busy to effectively fulfil his role of data collection and analysis.

Basic Local Health Centre Statistics

Keshem (BHC)



The local health structure

Keshem health district is located on the border with Takhar Province. In many ways it is easier for the health centre to travel to Talican (the administrative centre of Takhar) than it is to travel to Faizabad. This route to Faizabad is on very poor roads which are blocked for 3 months of the year (winter/spring). SAC have ten C3 clinics in the area and provides support to the health centre. These clinics are regularly supplied with medicines by SAC, but the supervision is a weak point in this parallel health system.

Visits from the MOPH are few and far between, mainly due to the poor condition of the road and the high cost of fuel. UNICEF supply vaccines and medicines to the Health centre via the MOPH and WHO has held some training courses within the district.

The centre is well-equipped and well-staffed by local standards. The building is new and spacious, although there are no inpatient facilities and little possibility of transfer to Faizabad for serious cases. There has recently been established a cold chain and a good supply of vaccines. Two vaccination technicians have just finished a one month course and are about to commence a vaccination campaign.

There is a qualified (MD) doctor resident in the area, as well as medical assistants and nurses of good quality. Many of the staff live in villages outside of the centre of Keshem and so it is difficult to find treatment outside of health centre hours. There are many private pharmacies in the town and the health centre staff appear to do private work in these clinics in the afternoons. These pharmacies are well stocked and if a patient has money, then there is no real difficulty with getting medication or treatment.

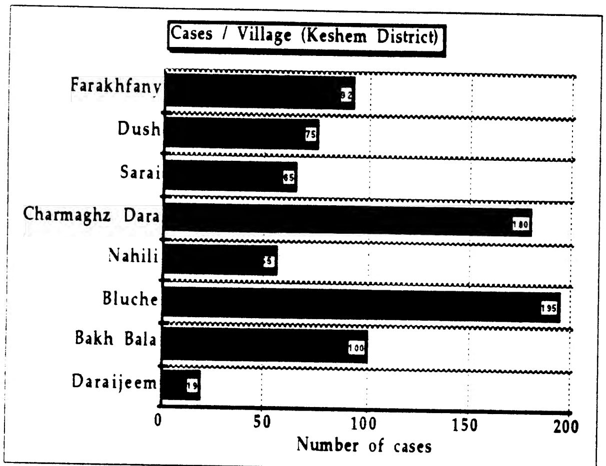
Cholera in Keshem

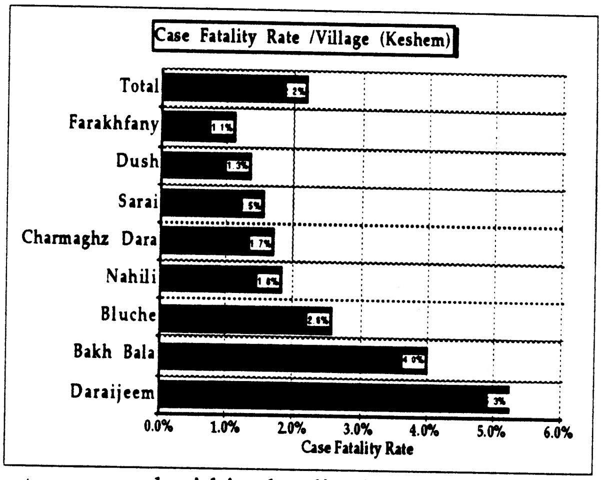
Keshem was one of the first districts of Badakhshan affected by the 1995 cholera epidemic. The cholera spread to Keshem from the neighbouring Takhar province, which borders the district. The first reported case was in a village called Bluche on the 24/5/95. This village is situated some 3-4

hours walk from Keshem centre. At the time of this first reported case, the WHO representative (Dr Mazari) was in Keshem conducting a district training course on village hygiene. Dr Mazari contacted WHO faizabad on the HF radio and arranged for supplies to be sent, although it appears that the MOPH did not receive any reports until the epidemic had been running for three weeks. The reasons for this was that it took three weeks to write and dispatch a formal report of cases.

Initial reports from the affected village were of 11 cases of whom 5 had already died. A medical assistant was dispatched to the village with some medical supplies and on arrival registered 50 more cases. The medical assistant stayed in the village for a week and there were no more reported deaths after his arrival.

Dr Mazari left Keshem for Faizabad on the 9/6/96, by which time there were few new cases presenting. It appears that he took the report to the MOPH and this was the first that Dr Asad, the head of data collection knew of the epidemic. In total there were only 8 villages affected by the cholera, with a total of 781 cases. In the following graphs the number of cases and case fatality rate of each village are represented.





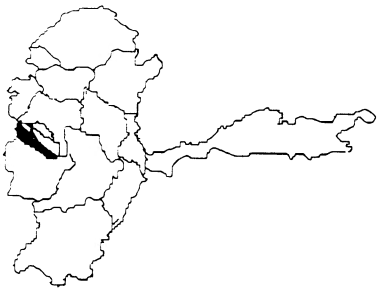
It will be noted that Bluche, where the cholera first emanated within the district sustained the largest number of cases. Even with the five deaths prior to medical assistance reaching the village, the case fatality rate is lower than other districts at 2.6%. Possible reasons for this stated by health centre staff are:

1. Good quality of the medical staff.
2. Good availability of medicines (both private and from WHO).
3. Rapid response and setting up of a village based treatment centre.
4. Easy access to health centre (by road).
5. Rapid response by village leaders to enforce better hygienic control.
6. Plentiful water supply.

The overall case fatality rate for the district during the epidemic is 2.2%. This is an example of what can be done with good management of an epidemic. The warning signs of a further spread of cholera into Badakhshan were there, but very little was done to prepare other districts for the imminent spread across the province. It appears that the health structures were quite complacent, thinking that they had been successful in Keshem and that the cholera was dying down. The surrounding districts such as Taskem and Darhem were not given stocks of ORS/Ringers in anticipation of possible cases.

The doctor of Keshem believes that there would have been major problems with supplies of medicines (especially Ringers lactate) if Dr Mazari from WHO had not been present in the district at the time of the epidemic. There were no specimens taken at this stage to confirm that this was in fact cholera. When compared with the 1993 cholera epidemic in Keshem, it appears that this year's epidemic was more severe.

Taskem (BHC)



The Local Health Structure

Taskem has only been classified as a health district for about one year. Prior to this year Taskem was part of Keshem district. The clinic is run from one small room and is essentially a SAC-supported C3 with additional assistance from UNICEF via the MOPH. The person responsible for the clinic, Zikullah has received a 4 year health training from Peshawar. Two members of the team have done 6 months courses also in Peshawar, whilst the other six have attended a short training course held in Talikan by MSH. There are 70 villages in the area, most of which are just small groups of houses situated in mountainous terrain. Even though this district borders Keshem, the road to it is very poor and often impassable. NAC are upgrading the road at the present which will increase availability of medicines. At present there is no private pharmacy and the supply of drugs to the centre is irregular. The population of the area is relatively poor and uneducated by provincial standards.

Cholera in Taskem

The epidemic in Taskem appears to have started on the 27/6/95. The case was a man aged 50 who died of severe dehydration after diarrhoea and vomiting for 6 hours. This man had recently travelled to the area from Takhar province. The MOPH in Faizabad were contacted and sent regular statistics during the epidemic which lasted about 6 weeks in the area. During this time the MOPH sent 10,000 ORS and 100 Ringers lactate to Taskem. These supplies arrived by donkey one week after the message reached Faizabad, but no doctor or representative of the MOPH visited the area to co-ordinate the response.

In total, 26 villages were affected by the epidemic. Most of these villages are small and there was rarely more than 10 people affected. The most affected villages were Sangicallan and Khjaifghani. The doctors kept no records of the reports that they sent to the MOPH and unfortunately the MOPH have lost these reports. There is one register from SAC at the clinic which is for patients treated at the centre with SAC medicines at the beginning of the epidemic. This records 29 cases of which 15 died (CFR 51.7%). This is not representative, as only the most severe cases would have been moved from the remote areas to the clinic. The doctor estimates that in total there were approximately 200

cases with 70 deaths (CFR 35%). In 1993 there were approximately 15 cases with just 3 deaths, so this year's epidemic hit Taskem district significantly worse.

Darhem (BHC)



The local health structure

This health clinic is supported by SAC and is completely ignored by the MOPH. At present the consultations take place in two rooms of the local junior school. There are three medical assistants working at the centre, all of which have attended seven month medical courses in Pakistan. The level of registration and efficiency of the centre was impressive. Drugs are supplied by SAC and sold at the clinic recovering 20% of the original cost. This makes for a very low treatment cost. The nurses will also often travel to Talikan to transport their own drugs.

Cholera in Darhem

The cholera spread from Keshem and Taskem districts to Darhem. Here they were particularly badly hit by the epidemic. The first reported case was on the 3/7/95 and the outbreak lasted until the 15/9/95. The staff were quick to alert the MOPH that there was cholera in the area. Regular reports were sent to the MOPH. Unfortunately all the reports that they sent to the MOPH were lost except one, which records a nine day period at the height of the epidemic. This shows 421 cases with 97 deaths (CFR of 23%). In response to data such as this the MOPH sent 200 sachets of ORS and 70 bags of ringers lactate. Many of the population travelled to Keshem to buy Ringers in case someone in their family were ill. Those who were poorer often went without treatment. MERLIN were not informed by the MOPH during its stay that there was active cholera in Darhem. This may have been for political reasons as the area is controlled by the Hesb i islami faction and the health centre run by SAC. It was by accident that we found out that this district existed and when eventually we managed to get hold of the above report, the cholera epidemic was over.

Introduction

Cholera has spread widely since 1961 and now affects at least 98 countries. Extensive experience has shown that the introduction of cholera into a country can not be prevented; its spread within a country, can be contained only by appropriate control measures. A MERLIN team was present in Badakhshan province in Northern Afghanistan, on an evaluation mission, when it was contacted by the Ministry of Public Health and informed of the presence of an epidemic of cholera within the region. The following report follows the subsequent actions taken by the MERLIN team.

Summary

This years cholera epidemic in Badakhshan province was more severe than the last epidemic in 1993. **The total number of reported cases over the period of the epidemic totals 5716. Of these there were 763 reported deaths occurring mainly in the more remote districts. This gives a global case fatality rate of 13.4%.** By international standards this case fatality rate is very high and underlines the need for a serious review of the health care system within the province.

Although there is often active cholera in this region the severity of this years epidemic was being greatly underestimated and the relief efforts ineffective. MERLIN's team, having arrived probably post peak in the epidemic, then set to work to try to co-ordinate and improve the response to the epidemic and set up better systems within the region to cope with future outbreaks.

This report attempts to describe the methods and strategies adopted by MERLIN and a critical analysis of the impact of the actions taken.

Population

Badakhshan has an estimated population of approximately 700000. The majority of the people are semi subsistence farmers producing a small amount of cash crops. In the past Badakhshan province has been a net importer of food, principally wheat. There is a tradition of migration particularly in the harvest time of casual labourers from Badakhshan to Takhar, Kunduz and Baglan provinces to work in the fields to supplement their incomes. It is estimated that in the outlying mountainous districts up to 60% of the population are opium addicts principally in Shegnan, Wakhan, Eskeshem and Zebuk districts. Most of this opium is produced in Argu, Khosh and Darhem.

Ethnically the population is predominantly Tajik but there are a number of significant minorities. Argu district is mainly made up of Uzbeks with a few Hazara villages between Argu and Artingalau. The population of Wakhan has a large percentage of Kirghiz who regularly cross into China to trade for basic luxuries. The populations of Karanmanjon and Eskashem are mainly Ismailis. There are groups of nomadic Kandahary people who move through the province in spring up to lake Shiva and return in the autumn on their way back to Kunduz. There are over twenty languages and dialects spoken in the province.

In total, there were 56 villages affected by cholera, most of which had at least one fatality. The table below groups villages by their CFRs and identifies those that need to be assessed with regard to water/sanitation/health education.

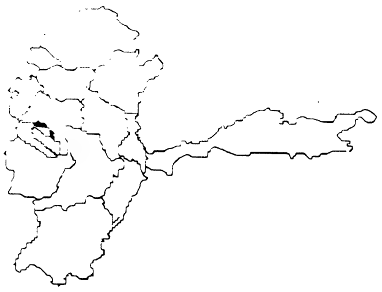
0-4%	5-9%	10-14%	15-19%	20-24%	25-29%	30-34%
Balaki	Kataqush	Zirkootal	Dah Payan Amchian	Dah Bahla Amchain	Draichirak	Doghlat
	Mungi	Alani	Koolabi	Daria Mahmood	Sayda	
		Qoutaii	Duria Bajh	Nooman	Gharchi	
		Jangalsaid	Cheshmi Kalandar	Gazakil		
		Chapa	Qaziqushlaq	Qurua		
		Hajipahlawan	Omerbaqi	Khandanshar		
		Dah Mianah Amchian	Pitawak	Pingani		
		Dah Bala	Khammirhazr	Langer		
		Gulaki	Rowg Dusht	Kergian		
		Turganisufia	Dah Bazar	Kariak		
		Kersang	Shatal	Dariakhshik		
		Dah Bai	Noobad	Khspak		
			Shikhkalan	Nimtala		
			Kariabak	Mahajir		
			Zahrak	Malang		
			Draibagh	Tootprah		
			Doab	Ab Bala		
			Baghsofi	Kafter Khana		
				Turganiolia		

The cholera in Darhem lasted for 74 days, in which time there were 1330 cases with 204 deaths (CFR 15.3%). When asked why Darhem was so badly affected by the cholera, the reasons given were:

1. many people drink contaminated water (directly from irrigation ditches)
2. poor idea of disease transmission
3. no latrines.

The nurses recalled that Darhem was very badly affected by the 1993 epidemic, but that this year's epidemic was more severe. When asked what reasons could explain this, the nurses responded that this year had been very hot and that there was little rain in the spring. Almost everyone we asked also sited the weather as the causative factor for the cholera. Cold and high places do not get cholera.

Argu (BHC)



The local health structure

Formally part of Faizabad district, Argu can be reached within 45 minutes in the car. PRB have recently completed construction on a new Health centre and SAC have in the past had some input in the district by supplying drugs and introducing treatment registers. To date the staff have been working from two rooms situated close to the school. There are six members of staff, five of which call themselves doctors although it appears that they studied with IRC in Pakistan. In addition to this there are two vaccination technicians with another two being trained in Faizabad at the present time. Argu has a laboratory analyst, but when visited, he was working from his own private laboratory in the bazaar.

There will be inpatient facilities in the newly built clinic. Severely ill patients could be evacuated to Faizabad hospital which is 45 minutes away by car. There is a good private pharmacy in the Bazaar and its proximity to Faizabad means that drugs can be easily sourced. The registration of cases in Argu is the best of anywhere in the district and the staff are well motivated.

Cholera in Argu

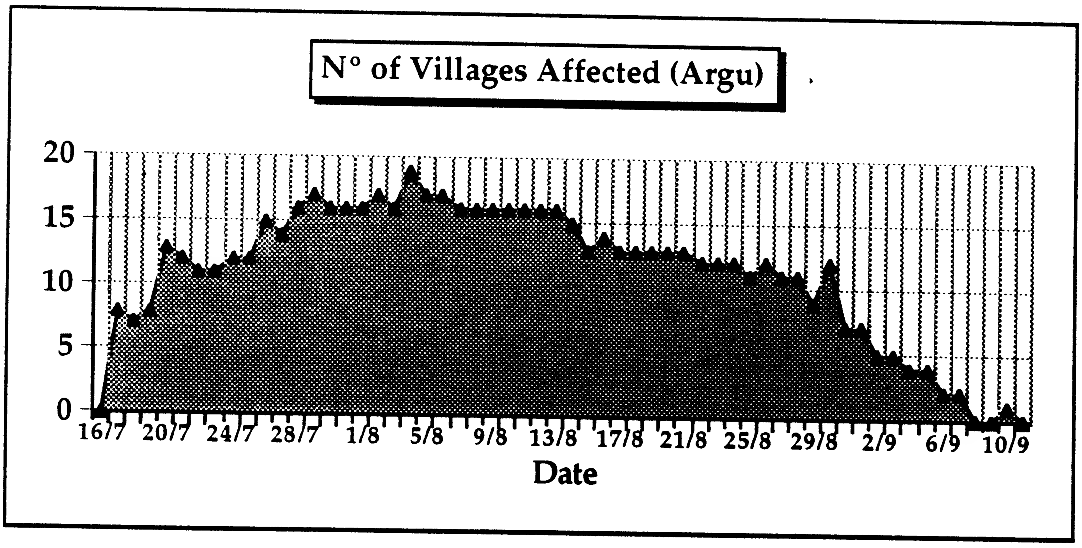
The first reported case of cholera registered was on 17/7/95. The figures for Argu are comprehensive. Although individual cases have not been registered, daily village totals for the epidemic are available. These figures also include data on sex and age. WHO took specimens from the area (Hafazmaghl village) and one of five specimens came back positive for cholera (El tor biotype, Ogawa seotype).

MERLIN first arrived in Argu on 18/8/95 which was about day 32 of the epidemic in the district. Five central ORS/IV treatment points were set up in the following villages:

1. Darkhan
2. Gandah Cheshma
3. Qyliadra
4. Khawaya Eshtul
5. Dahadahy

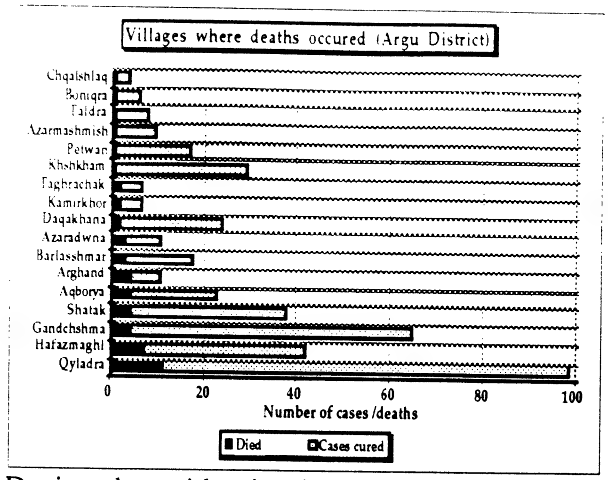
From these five points, ORS was easily accessible to 29 affected villages. The ORS points were set up in the manner described above (ORS points). In Argu the ORS points functioned for between 3 and 23 days. The effectiveness of the ORS points will be discussed in a later section.

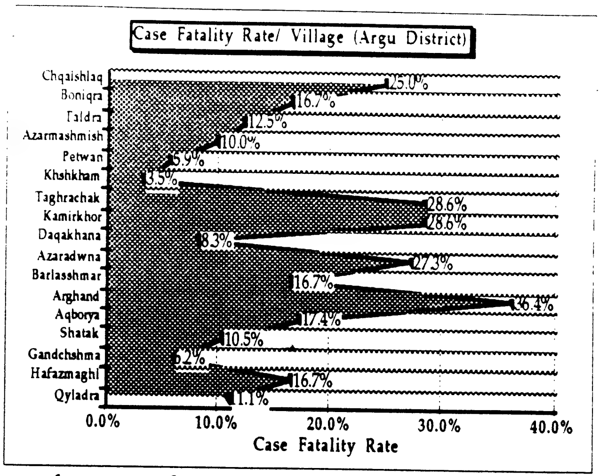
The next graph represents the numbers of villages affected by the cholera at any one time. The peak number of villages appears to be in early August, with a brisk fall-off in September. In Argu, as with other clinics, the staff believe that the main reason that the cholera diminished was the weather. If there were two or three days of mild weather then it was not uncommon for no cases to be reported in this period.



The following graphs represent the number of cases and CFRs /village in Argu district. There were 38 villages affected by cholera during the epidemic of which 17 villages suffered fatalities. The names of these villages have been given to SAC and Afghan Aid who are considering working in the field of water and sanitation in the next year. Hopefully this data will help them to ascertain where to build wells and invest in irrigation schemes.

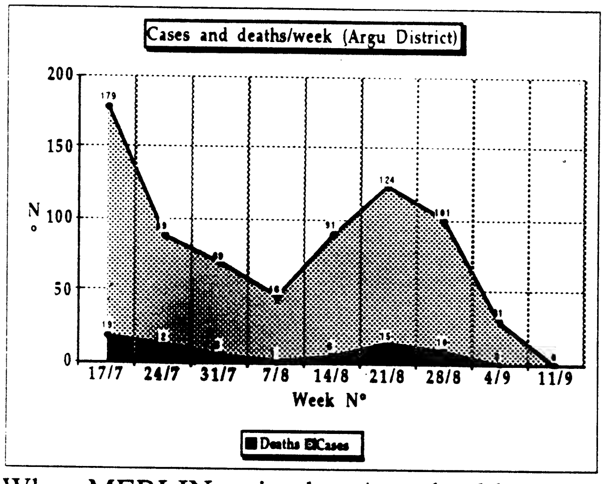
Whilst the quantity of water in the area is rarely insufficient, due to the high water table in Argu, the quality is often a problem. Often water is brought to the village from irrigation channels, the spring being some 1-2kms away. In other cases there are good springs within the village, but it is not very well protected from animals and overflow from irrigation channels. In both cases the water could be made much safer with very little financial assistance. In some cases the commander of the district has built good wells (20 villages). If this continues and is taken to other geographically suitable districts such as Darhem then the incidence of diarrhoeal diseases could be dramatically reduced. The villagers are very enthusiastic to improve the quality of their water and we received 32 letters from villages asking to work together with MERLIN to assist in well construction.

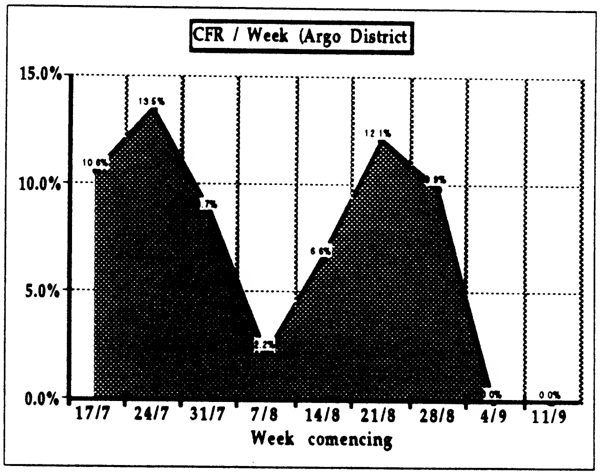




During the epidemic, the total number of registered cases of suspected cholera were 750, with 69 registered deaths (CFR of 9.2%). There are many villages not represented above, where fatalities did not occur. Hafazmaghl, the village where the positive cholera specimen was taken had 42 cases with 7 deaths (CFR 16.7%) as shown above.

The following charts show the evolution of the epidemic in Argu district. The epidemic appears to get off to an explosive start, with 179 cases and 19 deaths reported in the first week. The spread across the district was dramatic, by the end of the second week 16 villages had been affected. It is significant that when the number of cases presenting drops, the CFR drops. The nurses feel that the numbers of cases presenting dropped in the week commencing 7/8/95 because the weather became quite mild. The hot spell towards the end of August is blamed for the reoccurrence of cases, although diarrhoeal disease continued in these villages throughout the whole period.
MERLIN's intervention in Argu coincided with this second peak of cases. The health centre was well supplied with ORS/Ringers, there were five ORS/IV points and much training had been done. Still the CFRs remained high.



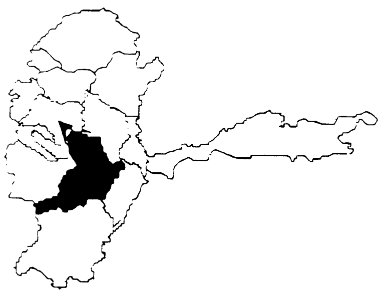


When MERLIN arrived at Argu health centre, they were poorly supplied with medicines, and the staff were working from the health centre with little presence in the villages. The staff at Argu clinic were very happy with MERLIN's activities and wrote an official letter praising our work. We held a small cholera workshop with the staff to discuss their performance this year and how it could be improved. They felt that the ORS points had been on the whole a great success. Their plan for next year is as follows:

1. Have ORS/Ringers in stock ready prior to an outbreak.

2. Train people in affected villages to administer ORS and spread health education messages.
3. Respond quicker by sending nurses to the villages.
4. Encourage villages to protect and improve their water supply.
5. Ask for Faizabad hospital to send doctors to help with any cholera response.

Jurm (BHC)



The local health structure

Jurm district is situated south east of Faizabad district. Its local population live either side of the Konche river in the very fertile Jurm valley. The population are quite rich by Badakhshan standards although there is little emphasis on education. Wages are higher than Faizabad itself.

There are two health centres in Jurm, one supported by the MOPH and the other supported by SAC. There appears to be little collaboration between the two centres. We have contacted SAC directly about this problem and they have started discussions with the MOPH clinic with the object of integrating both clinics into one structure.

The MOPH clinic employs 20 local staff:

Dr Talib (MD).
3 Male nurses.
1 Laboratory tech.
3 Female nurses.
2 Vaccinators.
2 Administrators.
1 Driver.
6 Cleaners.
1 Gardener.

The health centre was in a very poor state of repair. The roof leaked so much that it was impossible to use the centre for 4 months a year, many windows were missing, there were mud floors, and many of the rooms were not completed. See logistics report for rehabilitation work carried out on the clinic.

Cholera in Jurm

It appears that the epidemic in this district started in a village called Ferghamung where 15 villagers died of severe diarrhoeal disease before Cholera was suspected.

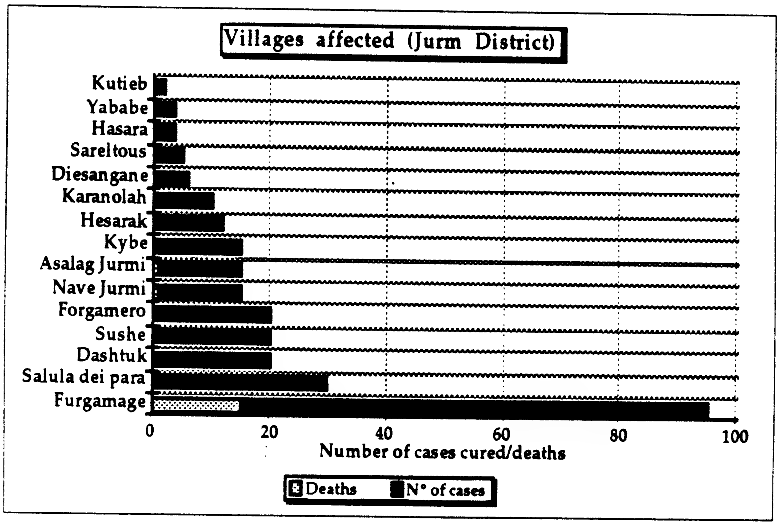
MERLIN first arrived in Jurm on the 16/8/95. The team brought supplies to stock the health centre with ORS, Ringers etc. and also material necessary to set up ORS points in the villages. After discussion with the Staff of the health centre ORS points were set up in the following villages:

1. Hesarak
2. Hengaran/Pangerian/Keb
3. Dahtuk/Nawa
4. Kharundab
5. Chungbula
6. Nawi Jurm
7. Ferghamung

Each of these points were staffed by one member from the health centre and supplied with 100 ORS, 10 Ringers, 2 buckets, cups, soap, registration book and pens. The idea was that they would stay in the village giving immediate treatment, being re supplied by the health centre. The effectiveness of these ORS points will be discussed later in the report.

When MERLIN returned on the 1/9/95, it appeared that all the ORS points were set up in the villages identified. The stocks lasted for about 3-6 days depending on the village. Instead of then sending to the health centre for more supplies, the staff decided to go back to Jurm and continue to work from the health centre. The reasons for their return are discussed in the section evaluating the ORS points.

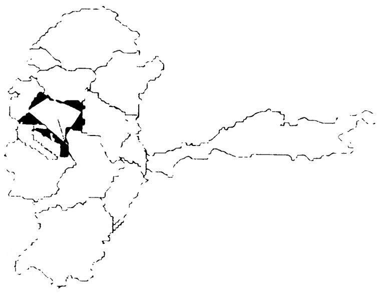
Unfortunately although the staff apparently left the cups and buckets in the villages, they did not leave any supplies of ORS. They also did not train anyone to distribute ORS to patients or register the cases. They felt that nobody in the village could be trusted. They would either sell the ORS or else keep it for their own family. This fear that supplies will be misused by staff is one that permeates all levels of the health structure. It is the main reason that medicines are always stockpiled in hospital or health centre stores. This fear needs to be overcome to prevent patients dying because of inaccessibility of supplies of ORS. I suspect that after 6 days in a village, the health centre staff were keen to return home to their families. Therefore at the time of my visit all registration was at the health centre level, there were stocks of ORS etc. only at the health centre and all was becoming calm. The MERLIN work was praised by the staff, especially in giving supplies and emphasising the use of ORS. The ORS points were seen as being successful, but no longer of use. Of all the ORS registers distributed by MERLIN, only five out of the eight were recovered by MERLIN.



The graph above represents the 15 villages affected by cholera. Ferghamunge is the village most affected, with 95 cases and 15 deaths (CFR 15.7%). Once cholera was suspected only two more people died. This makes a total for the period of the epidemic of 273 cases, with 17 deaths (CFR 6.2%).
The performance of Jurm clinic mirrors that of Keshem's. There is an MD doctor, good health facilities, good drug supply (Private) and wealthy population. The majority of the deaths occur within the first few days of the epidemic and to reduce this villagers need to be quick to report cases of severe diarrhoea and vomiting and health workers need to be quick to respond to any deaths, getting supplies of ORS to villages and setting up of ORS points.

The last reported case was on the 9/9/95, so the epidemic lasted approximately 34 days. MERLIN's presence would have been on day 10 of the epidemic. There were no deaths after the MERLIN's intervention.

Faizabad (Hospital)



The local health structure

Faizabad is the provincial capital and is the site of the provincial referral hospital. Faizabad Hospital has facilities for 80 inpatients and boasts the following facilities.

MCH clinic (first in District) supported by UNICEF
Vaccine store (well managed, although no vaccines in district)
Vaccination sessions (only regular vaccination service in Region)
Operating Theatre (only surgical facility in province)
TB treatment
Laboratory (Malaria, TB and stool exam)
Blood transfusion
X-Ray (poor quality due to poor power source)

Faizabad hospital is staffed by 20 doctors 15 of which are women. This fact is good for Faizabad, as it means that sick women have more access to good medical treatment, but it does mean that the 5 male doctors have to make all the supervisory visits and missions to the district health centres.

Cholera in Faizabad

The first reported case in Faizabad district was 18/7/95 and the cases have been well registered since then. The deaths were not registered, but I am assured that there were only 7 deaths, one occurring after MERLIN's intervention.

Problems faced/actions taken

The hospital has little capacity to respond to a Cholera epidemic:
There was no isolation facilities for cholera patients. Offices were turned into treatment rooms and tents and latrines were erected by MERLIN to cope with these increase demands.

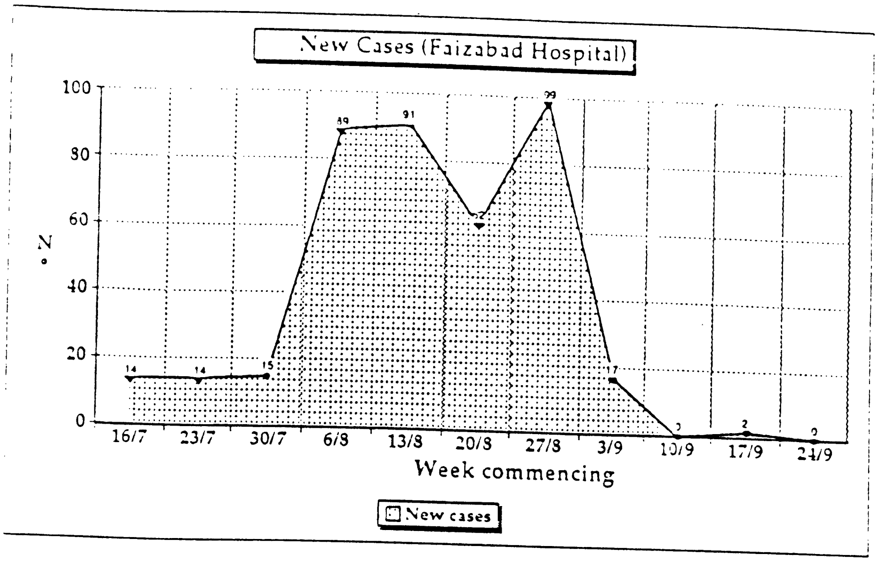
Excessive numbers of family members were visiting patients.
Signs were erected and staff instructed to try to limit the number of family members visiting, explaining the reasons why.

There was an over-reliance on Ringers and ORS was not being utilised:
Teaching sessions for the nurses emphasising the importance of ORS were carried out. Also nurses were instructed to make at least 60 litres of ORS every morning and MERLIN regularly checked that this was being used and that the quality of the solution was good.

There was little in the way of case finding within Faizabad district:
A team of nurses was sent to set up ORS points in the Yaftali Pyon region of the district. There were sporadic reports of diarrhoeal cases in the area which has no central health centre. MERLIN supplied equipment so that these ORS points could be set up. Even though MERLIN has been promised by the MOPH that statistics will be forthcoming we are yet to find out even the names of villages where ORS points were set up. The team have visited many villages in this area and seen no evidence of any intervention by the MOPH. Therefore I fear that villages in close proximity to Faizabad hospital (one days walk) may well receive worse care than some more distant villages, because there is no system to send health staff out to cope with epidemics in the area.

Imbalance of trained doctors in Faizabad compared with the district health centres:
The five male doctors were sent out from the hospital to the districts (Baharak, Shari-Bazourg and Ragh). Unfortunately this was mainly to assist with a WHO training scheme for village health workers and happened late in the epidemic. Such an action would have been more useful earlier in the epidemic.

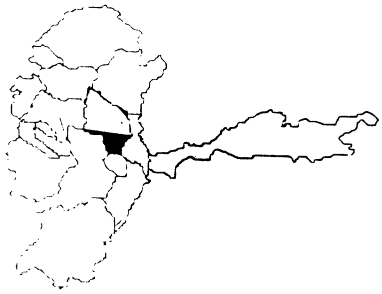
The evolution of the epidemic in Faizabad hospital



The above graph represents patients presenting at the Faizabad hospital with suspected cholera. The majority of cases presenting in the month of august. MERLIN's intervention on the 15th would therefore be midway in the epidemic. On my rounds of the clinic over this period, many patients were probably suffering from little more than Malaria, food poisoning or mild diarrhoea. Some patients had little in the way of diarrhoea. This was especially the case towards the end of the epidemic, when I expect that the hospital did not want to loose the attention the NGOs were giving it.

The last reported case in Faizabad hospital was on 13/9/95. For the total period of the epidemic, there were seven deaths out of 401 cases (CFR 1.75%). Before MERLIN's intervention in the unit, there were 160 cases with 6 deaths (CFR 3.75%). After MERLIN's intervention this figure falls to 241 cases with 1 death (CFR 0.42%).

Baharak (BHC)



The local health structure

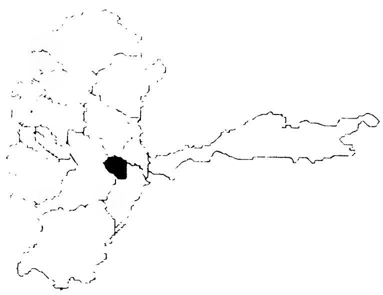
Baharak is on the main route from Faizabad to Jurm or from Faizabad to Pakistan via the Chitral pass. Probably the third richest district after Jurm and Keshem. The clinic there is situated within a building which the local commander sees as his own. WHO have been building a clinic in the same design as Keshem Health centre, but there seems to be a problem of the construction company running out of money and so the centre needs further finance to be completed.

The doctor running the clinic is qualified from Kabul and appears competent. The centre has a laboratory tech. and all the staff appear to have some business in the bazaar. The local private pharmacies are very well stocked.

Cholera in Baharak

There were very few reported cases of suspected cholera in Baharak district. The first case was registered on the 1/8/95 and the epidemic lasted 48 days. MERLIN arrived on the 1/9/95 which is about 31 of the epidemic in the district. During the period there were 56 cases with 2 deaths (CFR 3.6%).

Wardouch (BHC)



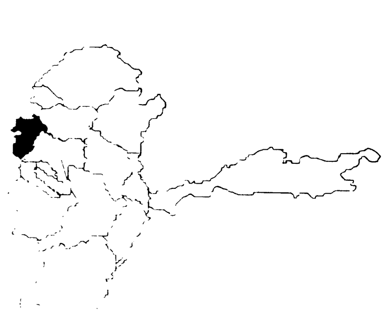
The local health structure

Prior to this year, wardouch was part of Baharak and Zebak health districts. There is no health centre, but there is one C3 clinic with good registration.

Cholera in Wardouch

Similar to Baharak district, Wardouch had very little in the way of cholera, although there were many more fatalities. In total there were 35 cases with 12 deaths (CFR 34.3%). The first registered case is on the 27/7/95 and the epidemic lasted until the 27/9/95. MERLIN had no information from the MOPH of these cases and there is no reporting from the clinic to the MOPH, this clinic being supported by SAC.

Shari-bazourg (BHC)



Up until earlier this year Badakhshan was made up of 15 districts this has since been expanded to 22. This seems to have been primarily for political reasons. Most of the new districts are areas that are controlled by or have allegiance to the Hesb i islami faction.

	N° of Villages	Population 1993	Projected 1995
Faizabad	79	75390	88312
Argu	70	59567	69777
Darhem	72	31546	36953
Ragh	55	67034	78524
Shari-bazourg	56	36920	43248
Darwaz	58	59859	70119
Khwahan	10	11586	13572
Jurm	68	63178	74007
Baharak	37	48232	56499
Wardouch	15	7241	8482
Kerano menjan	29	7735	9061
Eshkashem	6	9518	11149
Zebak	18	6967	8161
Sheghnan	18	22516	26375
Keshem	53	52150	61088
Tashkan	48	22306	26129
Wakhan	13	13487	15799
Regional Totals	**705**	**595232**	**697254**

Transport/Weather

Roads in Badakhshan are in extremely poor condition, unsuitable to anything but the sturdiest of vehicles, there are few spare parts available and a lack of good mechanics in Faizabad. Access to most of the province is not possible by road (see map below). Much of local transportation has to be undertaken on horse or by foot. The price of fuel is high due to the difficulties involved with getting it to Faizabad and the irregularity of deliveries.

The local health structure

It takes about two days to reach Shari-Bazourg, by car and donkey. The district is made up of many small villages resting on the side of the hills. Lack of water, particularly in the summer months is a major problem for this population. There is at present a clinic being constructed by WFP/SAC/NAC. This should be completed by next year. For the time being the clinic is run from one room, with no inpatient facilities. There are eight members of staff at the health clinic with only basic nursing/medical skills. There are often no drugs in the health centre. The private pharmacy in the Bazaar also had no medicines when we visited and the population are quite poor even by local standards so it is unlikely that they will their own stores of medicines. This means that when someone is sick, it may take 4-5 days travelling to go to Faizabad to get medicines.

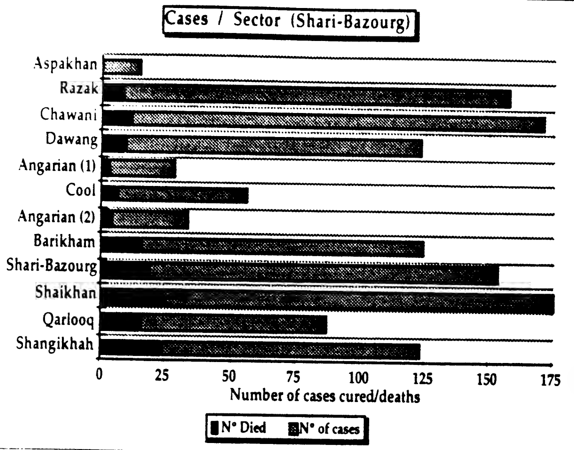
Cholera in Shari-Bazourg

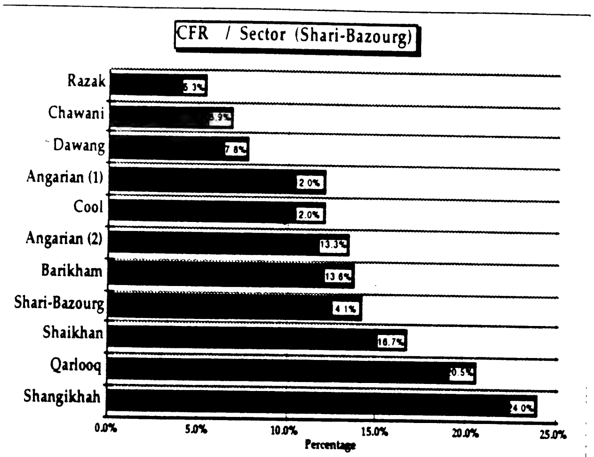
The cholera appears to have started on the 24/5/95 in this district bordering Takhar province. In previous epidemics, migration across the border was reduced by stationing soldiers on the border repulsing anyone trying to cross. This year the poor harvest forced many of the local population to move to Takhar province to search for work. Therefore isolation was not undertaken as a preventative measure. Although this method of reducing migration has been proved in many studies as having little influence on the spread of cholera, many of the population think that the severity of this years epidemic is due mainly to having no isolation policy.

On its arrival in the district, MERLIN provided supplies of ORS/Ringers etc. as well as material for setting up ORS points. The ORS points were set up in the same way as those described earlier. We were lucky that 15 village health workers selected by WHO were present at the health centre and so were given instruction as to the use of ORS and the treatment and prevention of cholera. They were instructed as to how to make ORS points. MERLIN set up 7 ORS points in the following villages.

1. Qarloq
2. Markazi
3. Dara Uroober
4. Pasako
5. Dawong
6. Barikham
7. Kura Ha

The graphs below represent the number of cases and CFRs/sector. Shari-Bazourg is split administratively into 12 sectors all of which recorded cases of cholera, but the CFRs range from 5.3% and 24%. In the district as a whole there were 1113 cases with 139 deaths (CFR of 12.5%).

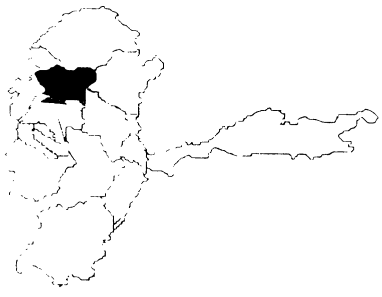




There was one village we visited (Qarlooq) with a population of 500 where the 24 hour production of water from their only spring was approx. 400 litres. Added to this is the fact that latrines just do not exist in many of these villages. The population is also very poor. This years poor harvest caused many farmers to sell up and leave the district. Also many had to travel to Takhar province for work to raise funds to feed their families. This increased migration is sited as one of the reasons why the cholera was bad in this district this year.

Shangikhah is one of the more remote sectors with borders with Takhar province and reports the highest CFR for the district.

Ragh (BHC)



The local health structure

This district has borders with Shari-Bazourg and is very similar except that it is slightly larger and poorer. The district has less of a problem with lack of water, in fact flooding is more of a problem. The centre of the district is very well organised and the bazaar fully stocked with merchandise from Takhar and Tajikistan. There is a very well stocked local pharmacy run by a member of the health centre staff. The clinic is well run, although there are no MD qualified doctors. SAC are at present building a new health centre for the district and they also support the running of the centre by supplying drugs. The new health centre should be finished by the end of 1995.

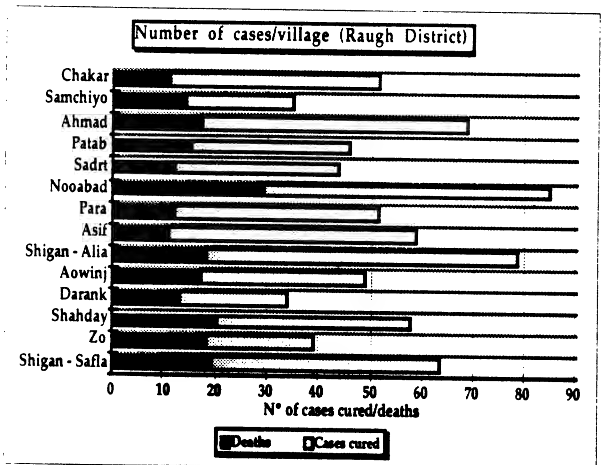
Cholera in Ragh

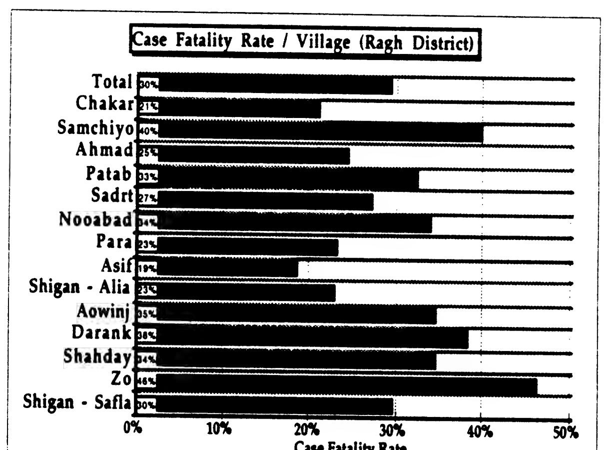
MERLIN sent a doctor from Faizabad Hospital (24/8/95) together with equipment to set up ORS points. He remained in Raugh for 20 days to co-ordinate the response. We were told by MOPH that ORS points had been set up in 10 villages:

1. Shangan
2. Shakhdara
3. Darang
4. Sadat
5. Sarychaker
6. Baragh
7. Sanyab
8. Rawinj
9. Khldasko Patir
10. Kalarkho Niler

When we visited Ragh on the 5/10/95 we discovered that the cholera had ended before his arrival and that there were no ORS points set up. Instead the equipment was just stored at the health centre ready for next year.

The epidemic in Ragh started on the 10/6/95 in Khamelga village which can be seen from the health centre. The first patient was recently returned from a journey to Takhar province (Rustock). There was then a rapid spread to other parts of the district. Messages were sent to the MOPH reporting the outbreak, but only 9 bottles of ringers and 200 ORS were sent for the whole period of the epidemic. The last case was found on the 3/8/95 which was prior to MERLIN's arrival in the Province.

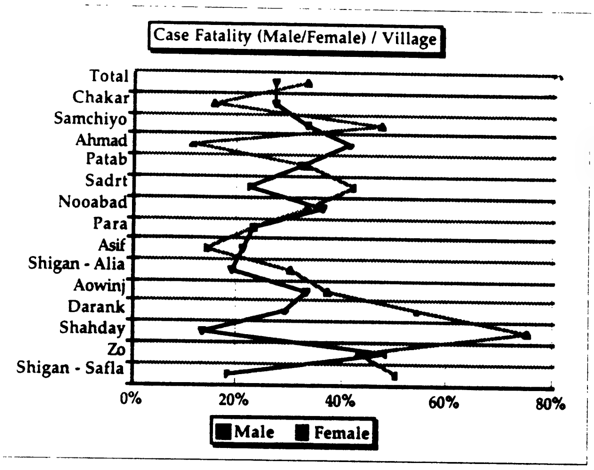




Above the graphs show the number of cases presenting and the CFR of the different areas affected. In each village affected there were many fatalities. The CFRs are amongst the highest in the province. What is it that caused such a high Case Fatality Rate (30% as a district total)? When asked, the nurses responded:

1. Very little in the way of ORS/Ringers lactate.
2. MOPH did not assist with supplies.
3. Lack of trained staff (No qualified doctor).
4. Poor people have no money.

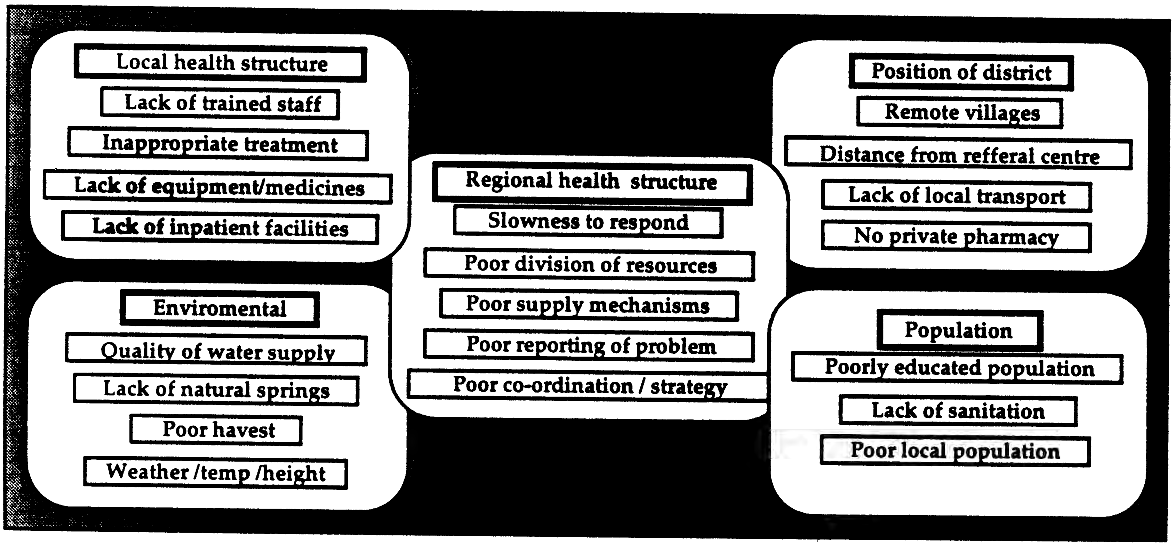
The registration of this centre was so good that they even gave data on age and sex of fatalities. The graph below looks to see if there is any difference between male and female mortality in these villages. It is difficult to say whether these differences are significant.
The tragedy of the management of the Ragh district needs to be addressed. Medical supplies played a major role in the high CFR and this can be resolved prior to next year. A programme with technical assistance and training is needed in the hopes of improving the response next time.



Keranomanjan District

The team of Drs from Kabul who were sent to this isolated district south of Jurm have since returned to Kabul. Dr Zia seemed to feel that Cholera was not a problem in this district. There is no record of these doctors setting up any ORS points and I believe that they returned quite quickly to the Faizabad hospital, where they help with general duties.

Factors influencing numbers affected/CFR



Regional health structure

1. Slowness to respond:

In the case of Keshem district, where WHO was present at the time of the epidemic, the response was immediate and supplies were sent quickly and efficiently to the areas with most need. Unfortunately in other areas such as Ragh and Shari-Bazourg there was little assistance forthcoming from the regional level. Why the response was so slow is debatable, but it is probable that many deaths could have been avoided if the response from the MOPH and NGOs had been swifter.
Predicting an epidemic of cholera in Badakhshan is not a difficult measure. If there is a hot spring, with little rain falling, and cases of cholera have been observed in Takhar province, then you can be quite confident that cholera will likely reach Badakhshan in the near future. If all agencies wait till a village has reported cases, before sending supplies the result is many avoidable deaths within the first weeks of the epidemic (see the experience of Keshem and Jurm).

2. Poor division of resources:

There is a poor division of medical expertise within the province. Faizabad hospital has 20 qualified doctors, whilst many of the rural health centres have no doctor. During the time of the cholera epidemic there were additional doctors sent from Kabul to assist, but on MERLIN's arrival within the province all these doctors were assisting within Faizabad hospital where there were already many qualified staff. One reason for this concentration of staff at the provincial centre during the epidemic, is that in order to relocate a doctor in a district where he has no family, it is necessary to give him some money to help with living expenses. If there is a strong governor in power then food would be given to the doctor to allow him some degree of economic freedom to travel. Another problem with sending doctors to outlying clinics, is that of the 20 doctors at Faizabad hospital 15 are women. Culturally it is difficult for them to relocate.

Within the health structure at provincial level, there is no one person responsible for the control of diarrhoeal diseases and co-ordinating the cholera response. At present most co-ordination of health service activities is done by Dr Zia (Director of health) who is probably too busy with all his provincial responsibilities to fulfil this further role well. The head of EPI and Ophthalmics is also responsible for data collection. A member of staff needs to be trained in epidemiology and give data collection and analysis as his sole responsibility.

3. Poor supply mechanisms:

At the provincial level there are stores of medicines kept by MOPH, WHO, UNICEF, ICRC and SAC. These stores appear not to be co-ordinated, in fact there appears to be more secrecy between the different agencies then there is co-operation.
SAC appear to have been taken totally by surprise with the cholera epidemic. They had very little in the way of ORS and Ringers even though this is the usual season for common diarrhoeal diseases. The use of ORS and the prevention of diarrhoeal diseases should be a central theme of their C3 clinics and to say that they are not an emergency organisation is a weak argument. The MOPH could easily say the same. The truth is, that whilst health centre staff were trying hard to cope with the cholera epidemic, in some cases they received little or no additional supplies of ORS/Ringers.
Not only is it necessary to have a good regional store of medicines, it is also necessary that there are stores of ORS and Ringers at health centres when cholera is probable.

4. Poor reporting of problem:
In order to respond to an epidemic, it is essential that good, rapid epidemiological surveillance is in operation and that this information is acted upon. If this information takes to long to arrive and gives very little quantitative information, then it is difficult to respond quickly and allocate resources effectively. In the case of the 1995 epidemic the following problems with data collection were identified:

- No apparent standardised reporting (time period, diseases, age groups).
- Reports from health centres arrived three weeks after the start of the epidemic.
- Dual registration for different NGOs in operation at some centres.
- No standardised registration within health centres.
- Many reports lost by the MOPH.
- No copies of reports kept at health centres.
- Data given to WHO, UNICEF is poorly presented and often late in coming.
- Under reporting; If no medication at health centre, then no treatment available and therefore no registered cases.

In order to improve the level of epidemiological and surveillance data, it would be necessary to design relevant simple monthly data collection forms, introduce an integrated system for health centre registration, hold provincial seminars to train one person in each health centre to be responsible for data collection, Identify one person at provincial level to co-ordinate these activities and give him relevant training to empower him to fulfil this role effectively.

5. Poor co-ordination and strategy:
There appears to be a dual health system in Badakhshan, with SAC and the MOPH being the main participants. SAC have little representation within the province until recently and MOPH do not have the ability to travel regularly to Takhar to attend SAC training courses or planning meetings. WHO and UNICEF also have large health programmes in the province, but getting all the parties around the same table in a formal way is quite difficult. Although at national level the roles and responsibilities of each agency are well defined, it is apparent that these guidelines are not strictly followed at provincial level. The WHO provincial planning workshop was quite a success, although it would have been better if all agencies were more fully involved. For good co-ordination all the agencies should meet at least every two weeks in formal discussion and minutes of these meetings kept and discussed at the start of the next meeting to see if objectives have been reached. Even during the cholera epidemic it was hard to get all agencies together to discuss a co-ordinated plan of action.

Local health structure (clinics)

1. Lack of trained staff:
In the more rural placements it is hard for the MOPH to find qualified doctors to work at the health centres. In centres like Shari-Bazourg and Ragh the level of training of the staff is fairly low, whilst at Baharak, Keshem and Jurm there are very well qualified doctors. This has had a major influence on the cholera response.

2. Inappropriate treatment:
Almost all of the health centre staff are quite well versed on cholera and its treatment. Their one shortfall was the importance given to Ringers lactate and the refusal to give ORS while the patient was severely ill/dehydrated. This had two main disadvantages:

- The under use of ORS, which can be far more easily taken to the villages and administered.
- The overuse of Ringers caused what Ringers there was to be used up to quickly and very soon there were ruptures in the supply system.

This problem with the over emphasis on Ringers lactate solution was a universally seen phenomenon.

3. Lack of equipment / medicine:
Apart from Keshem district where WHO was present at the onset of the epidemic there was always shortages of available drugs. The supply mechanisms were unable to respond quickly for extra stocks, especially in the more remote areas. There was no stocking of any centre prior to the inevitable spread of cholera to that district.
This supply problem was further aggravated if there are no private pharmacies in the area, or if the local population are to poor to afford the prescription charge.
In many cases stock and supplies were held back at hospital or health centre level. The reason for this is a general distrust of other health workers/volunteers.

4. Lack of inpatient facilities:
Most centres treat patients in their own home and have little or no inpatient facilities. MERLIN tried to create treatment centres in the villages (ORS points) to widen the availability of treatment. Although the doctors and nurses travelled to villages and formed distribution points, in every case treatment was carried out at home. It was very difficult to explain the advantages of caring for your patients in one place, rather than having to travel many hours per day to spend a short time with each patient. If there were many cases at one time then the staff were unable to cope and give sufficient care and the CFR increased.

Environmental

1. Quality of the water supply:
In many cases water is brought to the village by means of long irrigation channels. This water is used to irrigate a complex network of fields. It is not uncommon for families to fill up their drinking water containers from these ditches, even though it would not be difficult to send a child with a donkey to the spring to fill up on drinking water. Darhem is one district where this practice is common.
In districts such as Argu a small investment in improving springs and building wells would make a great impact on the incidence of diarrhoeal diseases in the area.

2. Lack of natural springs:
In some areas the quantity of the water is a major problem. Shari-Bazourg is one of these areas. One village we saw had just one spring giving water for a population of around 500. The daily production of water was around 400 litres in a 24 hour period at the height of the summer. Although the quality of this spring was good, the quantity was not sufficient even for drinking demands.

3. Poor harvest:
This year saw a very poor harvest in areas which depend on wheat that is watered only from the spring rains and not from irrigation. Areas which were hit the hardest were Shari-Bazourg and Ragh. This poor harvest also had the effect of making many farmers move to Takhar province to look for work. With such an increase of migration to a province affected by cholera, it is not surprising that these districts were badly affected by the epidemic.

4. Weather/temperature/height:
It is a universal belief that the weather has a major effect on the chances of an epidemic and the number of cases presenting. Hot weather is associated with increases in the number of diarrhoeal diseases. During the epidemic in some districts there are weeks in the middle of the epidemic where there are dramatically fewer cases. This is always associated with colder weather.
The higher and colder districts, even with poor water supplies appear not to be affected by cholera in the previous epidemics. This year was particularly hot and the number of cases were greater than the 1993 epidemic.

Position of district

1. Remote villages:
Districts with many small villages situated one or two days travelling from the health centres appear to have higher CFRs. Not because the patient could not travel to the centre, as this is culturally an uncommon practice (especially for women). The main problem is that health personnel are less likely to go to distant villages (unless their family live there) to give treatment. The impact of the ORS points is to make treatment more accessible to these villages.

2. Distance from the referral centre:
This has little effect, as it is very rare for patients to be transferred to Faizabad hospital. The only exception to this is Baharak and Argu districts. Even then patients will be kept at the health centre until their condition is so poor that referral is probably to late.

3. Lack of local transport:
Areas where the transport from Faizabad or Talikan is difficult suffer from less drug supplies, poorly trained staff, and often a poorer population. These will all be discussed in other sections.

4. No private pharmacies:
With such poor and irregular drug supplies to the health centres, I think that private pharmacies are valuable partners to the other health structures. There are many drugs in these pharmacies that are of low quality or inappropriate, but if an NGO was to become involved with giving credit and training to set up pharmacies in those areas with poor drug supply, then it would provide a sustainable source of drugs to the local population.

Population

1. Poorly educated population:
Although on the whole a poorly educated population may also be a financially poor population, it is probably true to say that more educated populations understand the transmission of diarrhoeal disease and how it can be prevented. That knowledge does not necessarily mean that sanitary habits are any better, but when cholera strikes a village it does give the opportunity to further protect oneself.

2. Lack of sanitation:

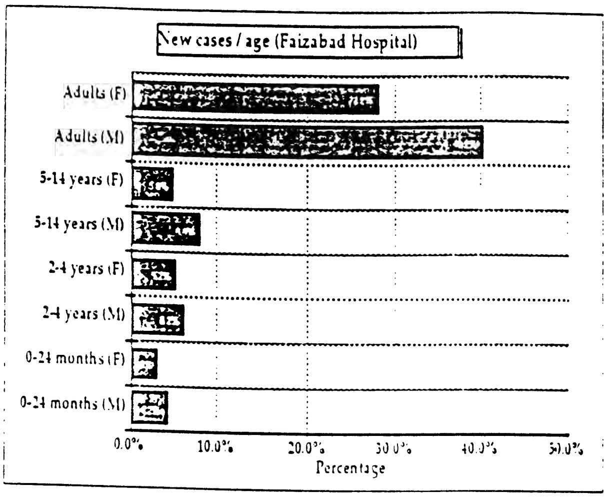
In our travels we saw very little in the provision of latrines. When they did exist, it was to use as night soil on irrigated melon fields and probably was a source of spread of the cholera. Even the doctor and nurses had no latrines in their houses.

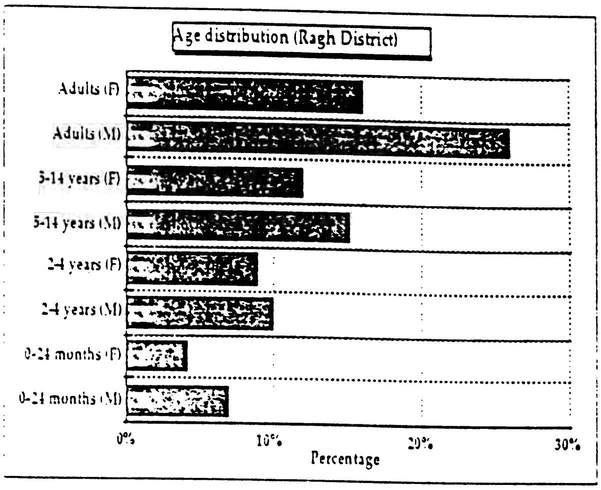
3. Poor local population:

In cases where the health centre had run out of medicines and their were local private pharmacies, it is probable that poor families had difficulty in finding treatment during the epidemic.

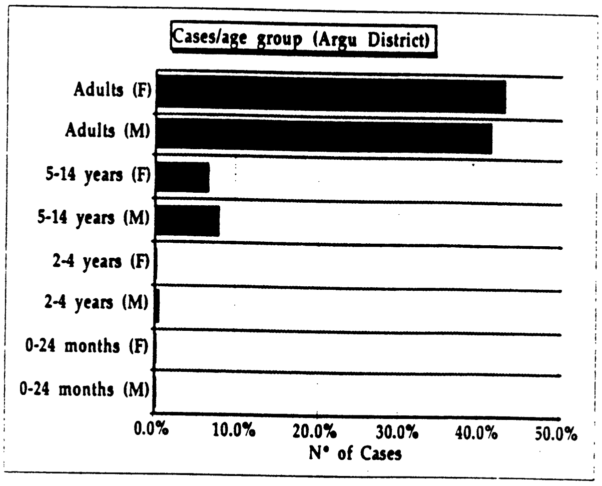
Who was affected by the cholera

The following graphs show the age and sex distribution of suspected cholera cases in the districts where data was of sufficient quality to differentiate.





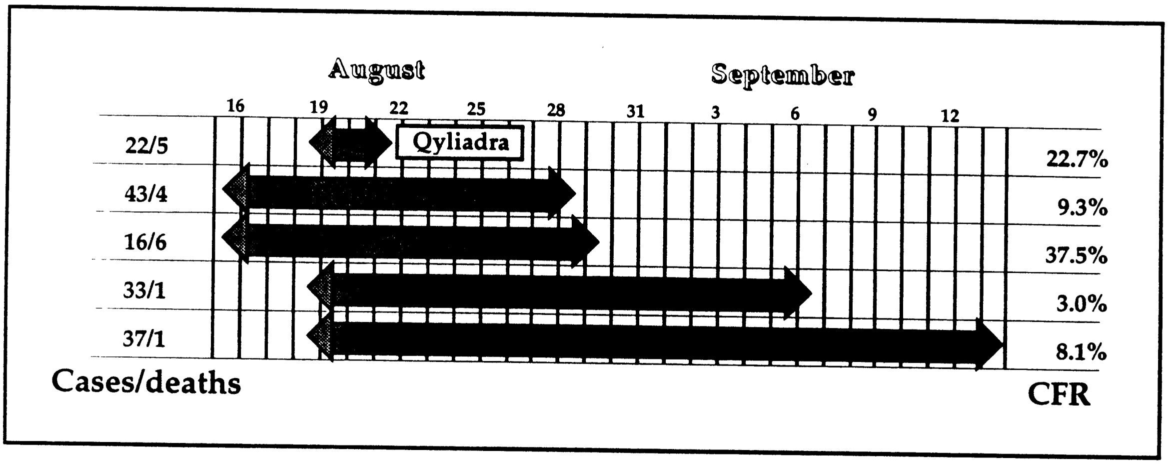
It can be seen that in each graph the number of under five's suspected of cholera is low compared with adults. In Ragh district the number of children suspected is proportionally larger than at the other two centres. Whether this difference is due to poor diagnosis is unsure, but the CFRs in the under five's in Ragh were higher than the other age groups, indicating that although less children became sick compared with adults, those that did become sick were more likely to die.



Evaluation of ORS points

Argu District Centre

As can be seen from the figure below, there was a great variance in the effectiveness of the ORS points set up in Argu district. Qyliadra, was the village most affected by the cholera, with the highest number of cases and fatalities. Over the total period the CFR was 11.1%. This means that for the four day period the ORS point was functioning there was a higher CFR. In fact three of ORS points in this district registered CFRs higher that the District average.



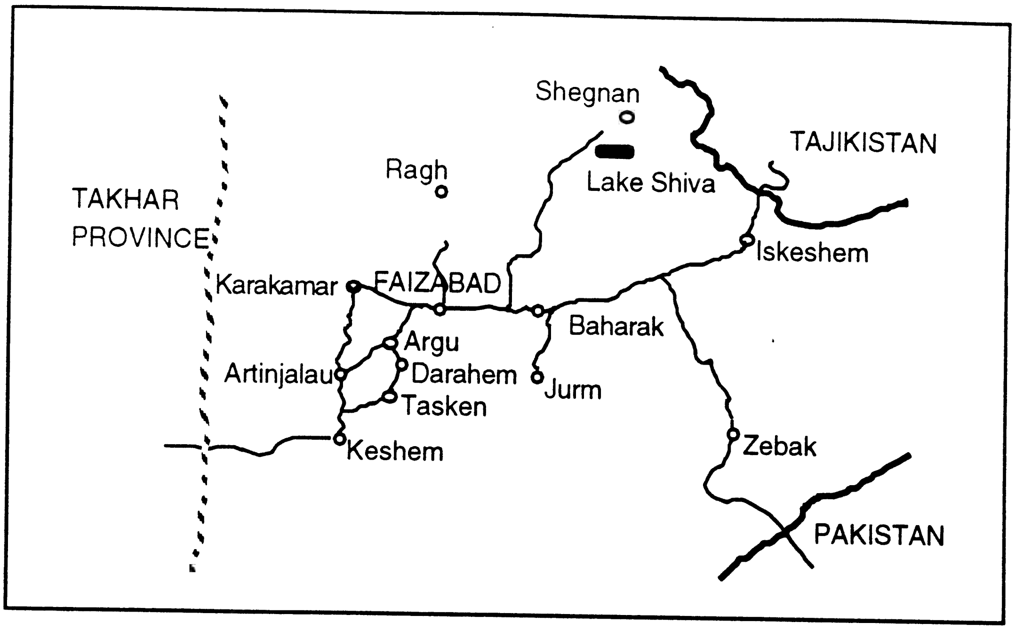
It is very strange that the CFRs registered at some of the ORS points are higher than the CFR for the epidemic as a whole. One would expect that with a member of medical staff and medical supplies available that the CFR would be lower. There are certain explanations I can think of:

1. There is under reporting of deaths in the first period. This is substantiated by the villagers of Qyliadra who say that in total 36 people died this year of Cholera. With a population of around 1,200 that means 3% of the village died of Cholera.

2. The deaths at the ORS point are mainly in children (4 of the five deaths are in under five's). The Health centre registers only 1% of cases occurring in children under five, whilst the ORS point register has 31.8% of children under five. It appears quite common this belief that children under five can not get Cholera. This assumption needs to be targeted with Health education so that children are brought for treatment quicker.

3. The doctor was in the village at the height of the epidemic and was completely overrun with the work. Also at this time the cases were more likely to be cholera. Later cases may well have been due to other diarrhoeal diseases.

4. The training of the medical staff needs to be assessed and if necessary improved.



There are four principal supply routes into and out of the province:

1. Chitral Pass, (4 days from Islamabad to Faizabad). This route is open from July to October to vehicles, and up to December on foot or by horseback. This year access to it has not been difficult but in the past it has been closed or limited by the Pakistani authorities.

2. Road from Mazar, (via Pul i Kumri, 2 days by hilux). This route is used by MSF-B to supply their projects in Takhar and Kunduz. They rail freight equipment from Belgium to Termuz in Uzbekistan and UNOCHA clear it through. The road itself between Kesham and Faizabad is in extremely bad condition although Afghan aid are working on it at the moment. There are also potential problems with moving equipment across the front-line which is quiet at the moment but subject to instability.

3. Road from Tajikistan via Eskeshem, (14 hr's by jeep from Faizabad to Eskeshem). This route has been used by WFP this year to bring in wheat for its projects from Dunshambe. There have however been problems due to a fuel shortage in Tajikistan and the security problems associated with the ongoing conflict between the Tajik government and the Tajik mujahideen.

4. Airlift into Faizabad airstrip, (used by the MOPH/Gov. to bring doctors and supplies in August). One option is to charter the UN Beachcraft but this would be expensive at $3 per kilo and the Beachcraft has a maximum payload of approximately 1MT. Faizabad airstrip has the capacity to take a C-130 Hercules or an Antonov of similar capacity but flight clearances would take time to organise with the authorities. Lastly there is the possibility of persuading the Kabul Government to assist with air support.

Climate

Most outlying districts are isolated and thus become inaccessible between December and March because of heavy snowfalls. With the spring in April/May the snow melts causing severe flooding often cutting the roads for some weeks. Badakhshan is also subject to persistent earth tremors and mud slides (earlier this year a village in Darhem was completely covered, killing over 300.)

Jurm District Centre

In Jurm district we only managed to retrieve 3 out of the eight ORS point registers. We were regularly promised these registers but after visiting the unit six times, we still had no success. The results from these three are represented in the table below.

Village	N° of days open	N° treated	Deaths	CFR
Isorac	5	12	0	0%
Keb	1	15	0	0%
Fergamunge	1	12	0	0%

It appears that all the ORS points were set up in the villages identified. The stocks lasted for about 3-6 days depending on the village. Instead of then sending to the health centre for more supplies, the staff decided to go back to Jurm and continue to work from the health centre. The reasons they state for this are:

1. The number of cases of Cholera was decreasing.

2. Most of the villages affected by Cholera were close to the Health centre (less than 2 hours walk) and therefore ORS could be sent when a case was identified.

3. They preferred to care for the severe cases at the health centre (with Ringers) rather than in the village.

4. There was too much work at the health centre now, (with cases of Malaria) for the staff to remain in the villages.

Unfortunately although the staff apparently left the cups and buckets in the villages, they did not leave any supplies of ORS. They also did not train anyone to distribute ORS to patients or register the cases. They felt that nobody in the village could be trusted. They would either sell the ORS or else keep it for their own family. Therefore at the time of my visit 1/9/95 all registration was at the health centre level, there were stocks of ORS etc. only at the Health centre and all was becoming calm. The MERLIN work was praised by the staff, especially in giving supplies and emphasising the use of ORS. The ORS points were seen as being successful, but no longer of use.
Jurm district is lucky in that transport to the health centre is very easy, there is a rich population, good availability of supplies and inpatient facilities.

Shari-bazourg District Centre

None of the Registers sent out with equipment were returned to the health centre. We were frequently promised these registers, but they were always still in the villages when we arrived. Although the nurses felt that the ORS points were very successful, there is no statistical evidence to confirm this.

General observations

In most cases the nurses did not follow the instructions for setting up an ORS point, train anyone to give ORS, register cases or stay for more than a week in the village (unless it was their own village). These aspects all need to be improved on next time and we have discussed with the health centre staff the advantages of these points.
A training budget has been set up to train villagers to give ORS and explain about the transmission of diarrhoeal diseases. This will be carried out next April prior to the season for diarrhoea. In addition volunteers will be given 40 ORS to practice with.
It appears that the idea of communal treatment is quite alien to the culture, especially for cholera and so the buckets and cups were quite useless. The ORS points major impact is in providing medical assistance and medicines to the more remote areas for a limited period and as such fulfilled its primary objective.

Conclusions

Soon after arrival, it became apparent that MERLIN had arrived in the post peak period of the epidemic and that the original objective of reducing the global Case fatality rate to less than 1% was unattainable. In some districts where there had been large numbers of Fatalities the cholera had already ceased or was on the decline. For these reasons the team decided that in addition to managing the response it would be necessary to collect data with which to get a real picture of the evolution and effects of the epidemic. With such data a review of the provincial health mechanisms for coping with cholera could be undertaken and weakness highlighted. One member of the local regional health team commented on the response in Ragh district calling it a travesty. We were therefore determined to strengthen the local coping mechanisms so that in future years the very high case fatality rates would not be repeated.

In order to strengthen and improve the cholera response the following actions were taken:

Setting up of district and regional cholera workshops:
The first step to improving the response to cholera is to open the forum for frank and honest discussion of this years achievements. MERLIN therefore held seminars, both at district and regional level to:

1. Present the figures of this years epidemic.
2. Discus how well they felt the response was.
3. Show how to calculate the CFR and discuss what is a bad/good CFR.
4. What were the major problems faced that caused high numbers of cases /CFR.
5. What could be done to improve their response.
6. What can be done differently next year.

From these discussions a regional cholera plan is being formulated.

The major agencies like WHO and SAC were contacted separately and we were lucky enough to meet evaluation missions from Afghan Aid, SAC and NAC. Similar discussions to the regional cholera workshop were held informally with these organisations perhaps increasing the profile and significance of cholera in Badakhshan.

Improving the supply mechanisms:
One of the major problems with this years response was that when cholera reached a district, it had little or no supplies of medicine and received little on no further supplies until often the epidemic had finished. In order to alleviate this problem, MERLIN has undertaken to set up small "cholera kits" within each district centre. The objective of these are to give the district supplies for the initial phase of the epidemic, which can be used until further supplies arrive from the regional level. The size of this supply depends mainly on how difficult it is to reach the health centre. For those health centres which are more remote, it is necessary to provide larger supplies as it will take longer to send reports to the regional centre and receive supplies. Those areas where there is little in the way of private pharmacies would also receive more. These areas usually also have very poor populations.
One problem with giving drugs to the health centres may be that these supplies are used or sold prior to the onset of any epidemic. Our belief is that ORS particularly is not seen as a saleable commodity and as such a large part of our supplies would probably survive, at least till the next season for diarrhoeal diseases. We also gave the health centres other supplies to treat Malaria and pneumonia as well as some general medical equipment. These could be used at any time and would increase the chances of the "cholera kits" surviving till the onset of the next epidemic. The "cholera" kits were also housed within strong, locked, metal boxes and as such were more likely to survive till next year.

Whatever happens to these supplies, one thing is for sure. In order to improve the response to cholera supplies need to reach as far as the villages. Having fully stocked health centres or hospitals are useless unless these supplies reach the villages where they are needed.
These cholera kits are designed to last for about 2-3 weeks before the health centres need to be re supplied by the regional agencies. MERLIN encouraged inter-agency discussions, where a reasonable stock level for next year was calculated. WHO and UNICEF have accepted responsibility for housing these stores and have purchased and transported them to Faizabad by UN convoy over the Chitral pass.

SAC were taken by surprise by the epidemic this year. After discussions with MERLIN they have decided to stock supplies in Mazar ready should there be a future epidemic. Also they will supply drugs to their C3 clinics, taking into account the season/common diseases presenting.

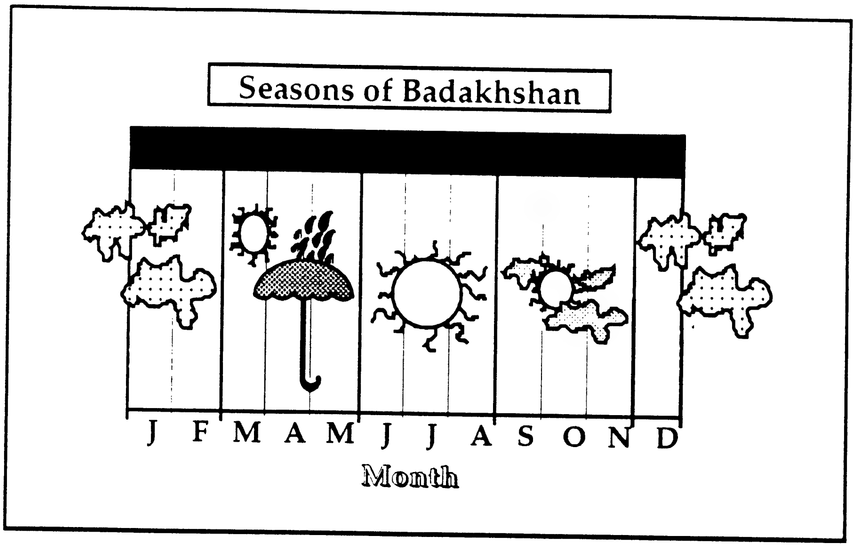
Improving regional co-ordination:
MERLIN set up regular formal regional cholera co-ordination meetings. SAC who are based in Takhar took no part this year in those discussions. After consulting MERLIN SAC representatives from Peshawar have decided to open an office in Faizabad. This will improve greatly the co-ordination between the agencies and hopefully reduce the effects of what is a present a dual health system.

Improve the training of local staff:
MERLIN have set up a training fund and started with seminars at district level for health staff. All these courses are based on strategies to reduce and treat with ORS diarrhoeal diseases and cholera. Further courses will continue next year in April (prior to the diarrhoeal disease season).
MERLIN have assisted the regional nursing/medical school with supplies of exercise and text books. Much training has been given on cholera and diarrhoeal diseases subsequent to our intervention.

Poor registration/data collection:
MERLIN has produced health centre registers and cholera registers to improve the level of registration within the health centres. The importance of data collection and the use that can be made of such data has been fully discussed at each health centre. The health centres have provided MERLIN with quite good retrospective data and we hope that this has given them good experience that can be repeated next time.

Highlighting districts/villages badly affected by cholera:
MERLIN has attempted to give other agencies such as Afghan aid and SAC information that can be used to target badly affected villages for water and sanitation programmes. Hopefully next year these agencies will commence a programme of small scale assistance in well building and spring capping.

With these changes and improvements to the district and regional health structures, we hope that any future response will improve on the very High case fatality rates seen this year.



Security

Local

Although nominally a secure government controlled area, the security situation within Badakhshan has been destabilised by the last five years of civil war and factional fighting in the rest of the country. Several commanders still maintain loyalties to other factions, principally Hesb i islami. These commanders have been kept in line by money payments from the government which they often use to maintain their own popularity in their districts with schemes such as well-construction in Argu. The government has also made political concessions, expanding the number of administrative districts this year from 15 to 22 to accommodate Hesb i islami areas, as well as giving key posts such as Chief of Police in Faizabad to Hesb i islami nominees.

Although President Rabbani is from Badakhshan, local people feel he has done little to help support the province, and the general feeling is of no particular loyalty towards him. The fall of Kabul to the Taliban would probably be enough for Badakhshan to switch allegiances. Essentially, people are tired of war and would support any kind of stable, unified Afghan government.

The local situation is further complicated by the replacement, in July, of Basir Khaled(who is now in Baharak) as Commander of Faizabad, after a disagreement with the Minister of Defence. Khaled is very popular locally, and a potential focus of discontent. The governor has very little real power and is principally there as a civilian figurehead having been selected precisely for his lack of a strong power base.

The situation has got quieter recently as many men have been sent to the front at Kabul after the Taliban's latest offensive (Badakhshan was meant to contribute 5000 men in October). There is however, still happy fire around Faizabad every day. Further east towards Shegnan there is fighting along the border between Tajik rebels and the Tajikistan government. The rebels are using Badakhshan, Takhar and Kunduz provinces as a springboard from which to launch operations into Tajikistan. Taloqan was bombed by government jets earlier this year resulting in 100 casualties. This action was due to the number of rebels supposedly in the town.

The nearest front lines are 10km west of Kunduz, (Government/Jumbesh) and approximately 40km Southwest of Kunduz, (Government/Hesb i islami). Neither are particularly active probably as a result of the money being made by the commanders who are imposing taxes on traders bringing goods from Mazar. It is not usually a problem for UN/NGO vehicles to cross.

Following the assassination of a Hesb i islami commander and 16 of his men on the Pul i Kumri to Mazar road, relations have recently deteriorated between Hesb i islami and Jumbesh who had an uneasy alliance against the government with the assassination . His funeral was held on 30/10/95 in Baglan and attended by 11 Jumbesh commanders including Dustum's second-in-command who were then massacred in retaliation.

International / National

People are awaiting the outcome of the Taliban's latest assault on Kabul. The Government is now in control of only 5 provinces in Afghanistan. During October, a grand alliance between Jumbesh, Hesb i islami and the Taliban against it was being discussed in Jalalabad. Since then, the shifting alliances seemed to have changed once again so a concerted, unified attempt to dislodge them from Kabul now looks unlikely this winter.

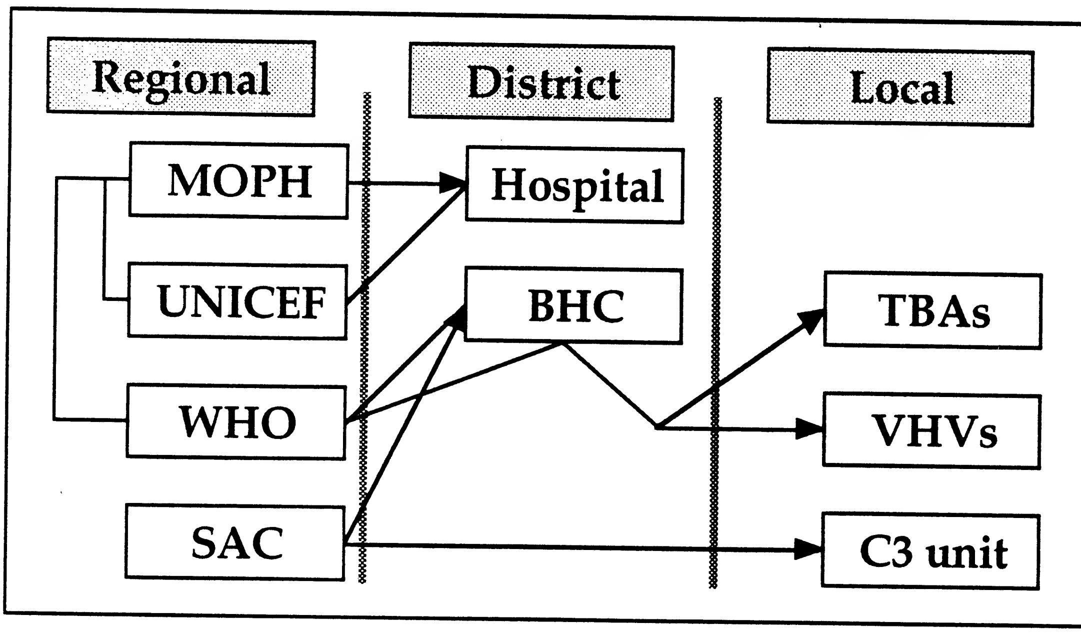
The Afghan government's relations with the Pakistani government seem to be at an all time low after the burning of the Pakistani embassy in Kabul in which one Pakistani diplomat was killed. Pakistan is almost definitely supporting the Taliban against the Afghan government, probably for two main reasons:

- to keep the trade route through the south of Afghanistan open to Iran
- to continue to destabilise any form of unified government in Afghanistan, (they supported Rabbanis faction when he was in opposition) as strong government in Kabul is perceived as threat to Pakistani national interest.

International factors that also have to be considered include the relationship between Dustum and the Uzbekistan government, and Iran's relationship with the shia minorities in Afghanistan, in particular the Hazaras.

Regional health structure

The four main partners within the Regional health structure are MOPH, WHO, UNICEF and The Swedish Afghan Committee (SAC). The organigram below represents a simplified version of the way these organisations interact within the regional health structure.



MOPH

This is the regional co-ordinating structure under which all the other NGOs should work. In practice this rarely happens. Most organisations decide on their own regional plans and then go to the MOPH to receive official sanctioning. Regional co-ordination meetings between MOPH and the NGO's do not occur on a regular basis.

The Ministry of Public Health is administered from its Regional base in the town of Faizabad. The Regional team is as follows:

Dr Zia	- Regional Director and Faizabad Hospital Director
Dr Assam	- Head of the TB programme
Dr Asad	- Head of EPI and Data collection
Dr Sayed	- Head of Malaria programme

Although the MOPH does make some visits to the district health centres, these are often little more than drug and equipment drops and political representation, with little in the way of formal health centre supervision or training.

UNICEF

UNICEF works almost exclusively through the MOPH and the Hospital, having little direct contact with the basic health centres. Their main areas of work are concerned with supporting the vaccination programme and supplying drugs. There appears to have been a big push this year with the vaccination programme, with a major training course and the establishment of a working cold chain in many of the health centres. Prior to this year, the region has received very poor vaccination coverage, even by third world standards, and it's hoped this new initiative will give many villages their first real opportunity for vaccination for many years.

In its initial phase, the basic health centres would benefit greatly from extra help in planning and implementing their own vaccination strategy and with forming vaccination posts within more remote villages. Drugs are first supplied by UNICEF to the MOPH who then distribute them to the health centres. Distribution is often in the form of basic health kits with some supplementary items. There is little in the way of formal stock control at the regional hospital level.

WHO

WHO is co-ordinated in Faizabad by Dr Mazari, who was Regional Health Director prior to his appointment with WHO. WHO supplies basic medicines to the health centres as well as equipment for distribution, such as mosquito nets. Unlike UNICEF, WHO prefers to distribute directly to the health centres, sending the MOPH lists of what has been distributed.

WHO have a programme for training community health workers which started in the districts of Ragh, Shari-Bazourg and Shegnan. Their aim is to train 12-15 VHWs and 8-10 TBAs in each district. They will then distribute TBA kits and medicines. The health volunteers will charge a consultation/treatment fee, the proceeds from which will be used to re-stock with medicines. There have been no guidelines set for the level of this fee, but I suspect that it will be 100% of the drug cost plus a small consultation fee. In some areas like Shegnan the educational level of the health volunteers is high, where as in more rural areas such as Ragh, most TBAs and VHVs will not be literate.

WHO regularly visits the health centres and has probably the best grasp of what is going on in the province. Their workshop for health planning was quite a successful attempt to look at the provincial health needs, but the plans designed were quite unrealistic. Some of the NGOs were either not present, or sent very poorly qualified junior representatives.

SAC

This organisation has a massive health programme within Afghanistan. At present they have no office in Faizabad, being based in Talican (Takhar province). There has to date been little co-ordination between SAC and the other NGOs within the province to date, but this will probably change in the near future, following a recent evaluation of their operation in Badakhshan. To date their activities have been in parallel to those of the other NGOs and MOPH, rather than complementing the activities of their partners.

SAC supports some MOPH basic health clinic, but its main programme is concerned with smaller C3 health units. Although there should be a major preventative component to their work, all that we have

seen in practice, is irregular drug supply, with a charging system in opposition with the drug supplies of other agencies. SAC have built many very impressive clinics, but their support to these centres has been a short-fall in their work. This is probably due to the number of C3s in operation, which makes regular supervision and data collection extremely difficult.

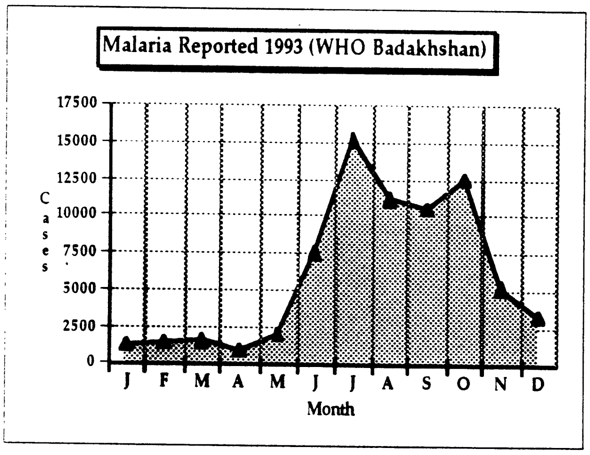
Epidemiological data

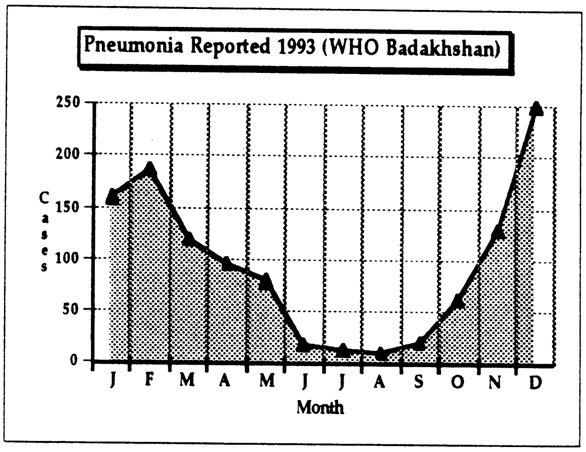
It appears well know by almost everyone in Badakhshan that the three main disease groups have almost their own season of incidence. The graphs below show the number of reported cases of Malaria, Pneumonia and diarrhoeal diseases.

Malaria

Malaria is seen by the local population as the most important cause of disease in the province. There are areas in Badakhshan where there is little or no malaria, because the altitude and weather make it impossible for mosquitoes to survive. In the lower areas, the Malaria season begins in July. A great deal of fatalities and shortages of medicines are seen in late August. At this time the price of Quinine in the private pharmacies increases from 300 to 600 Afghanis/tablet (12,000 Afs or $3 for a treatment of 20 tabs).

There have been some initiatives in the province by WHO, NAC, and MSF to distribute mosquito nets, although the programmes have been very small and mainly centred around Faizabad. There are many reports of chloroquine resistance but no studies have been done to substantiate this. In some health facilities there are laboratory facilities and confirmed cases of Plas. Falciparem are treated directly with quinine. Otherwise, mild cases are treated with Chloroquine (total treatment cost 300 Afs or less than $0.1) and only receive quinine if symptoms persist. Quinine treatment should be combined with fansidar, but this often does not happen in practice, probably due to the extra cost.

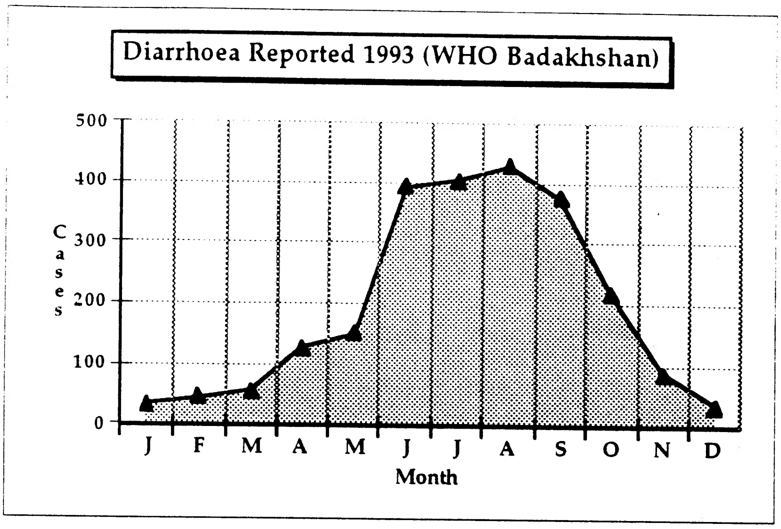




Pneumonia

Pneumonia is seen as a disease of the winter and spring months. During this time many villages are snowed in and inaccessible. Therefore many patients (especially children) do not reach the health centres for appropriate treatment. This problem could only really be relieved by having village-based

health workers, sufficiently trained to diagnose and treat cases of Pneumonia. A supply mechanism also needs to be in place to provide stores of antibiotics prior to the winter season. Logistically this is difficult in many areas particularly after October, so supplies should be ideally sent in early October.



The incidence of diarrhoeal diseases increases rapidly in mid spring and continues until the onset of the autumn. In areas such as Shari-bazourg there is a major problem with the quantity of water emanating from springs. In other areas, although there is enough water, its quality is poor and as the temperature rises, the little pools and irrigation channels become more of a health hazard. This year, during the cholera epidemic, it was impossible to buy supplies of Ringers and ORS in the major pharmacies in Mazar. Even when the price for 1 litre of ringers rose to 12,000 Afs, it could not be found. The trade route from Kabul is blocked by fighting, and the Chitral pass is not open to trucks until the end of July, so supplies of ORS/Ringers need to be stockpiled in advance: not just for epidemics, but also for the usual seasonal diarrhoea/dysentery season.

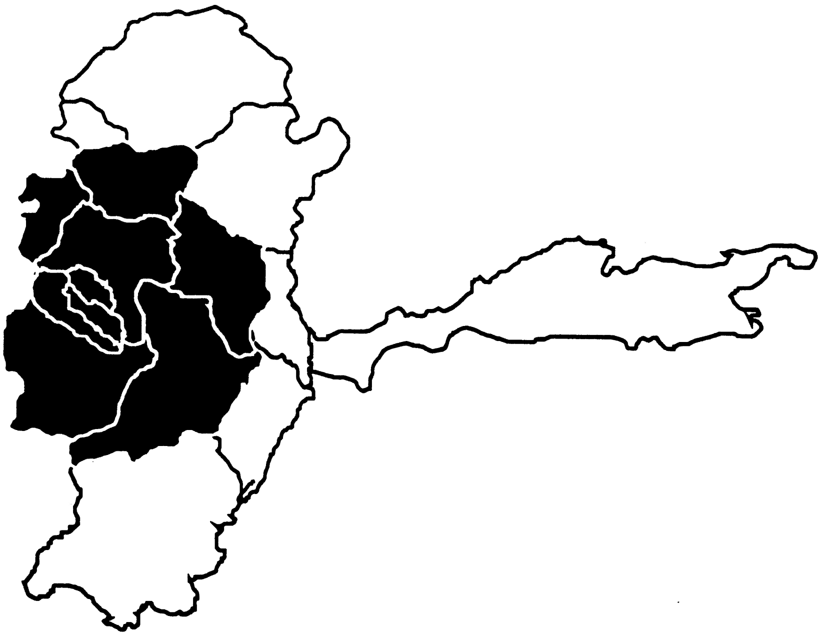
merlin

Cholera Activities Report

Badakhshan Province

Northern Afghanistan

15/8/95 - 31/10/95



* The black areas represent districts affected by cholera

Sam Higginson
Paul Keen
Dr John Howarth

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